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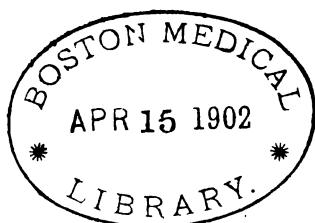
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OF
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DOUGLAS STANLEY, M.D. EDIN., M.R.C.P.,
AND
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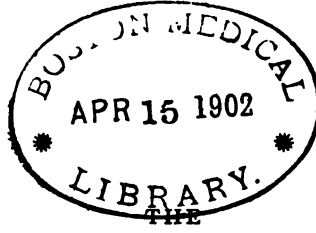
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BIRMINGHAM MEDICAL REVIEW.

JULY, 1901.

ORIGINAL COMMUNICATIONS.

OTITIS MEDIA AND PNEUMONIA.

BY T. STACEY WILSON, M.D., M.R.C.P.,
PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

ALTHOUGH Otitis Media is one of the well known complications of Pneumonia, it is I believe one which is very apt to be overlooked owing to the fact that the recognised symptoms of middle ear inflammation are often absent when it occurs as a complication of an acute disease.

As this oversight may have very serious results to the patient I am emboldened to publish these few remarks on the subject although they are based upon a somewhat limited series of cases.

As regards the frequency of this complication, although but little stress is usually laid upon it, I believe that if the middle ear be regularly examined *post-mortem* it will be found that otitis media exists in a very considerable proportion of those who die from pneumonia during childhood or adolescence. My own hospital statistics during the period under review in this paper are scanty, as I only had 7 deaths among 71 pneumonia cases between the ages of 3 and 25 years. In two, the ears were not examined. Three out of the remaining five had suppurative otitis media, which was, to all appearance, the cause of the pyæmia which brought about the fatal result. Out of the 71 cases mentioned above, 8 per cent. had well-marked otitis media.

Some very striking statistics having a similar tendency were published in the *Therapeutic Gazette* for May 15, 1894. The

statement is there made that out of a long series of *post mortem* examinations on young children, the writer found that otitis media was more often present than absent.

In connection with these statistics the question will probably be asked: If these are at all representative in character, why is it that more notice is not taken of ear disease as a complication in pneumonia? My answer is that it is a complication which is very easily overlooked. In pneumonia, otitis media may be absolutely latent so far as any objective symptoms are concerned and not infrequently is so.

There may be no deafness noticeable, no pain or headache, no discharge from the ears, and yet the patient may really be dying from retention of septic pus in the tympanic cavity.

In such a case, the true cause of death is apt to be overlooked until the *post-mortem* when, if the pathologist be careful enough to examine the ears, suppurative otitis media is found, and its discovery will cause unpleasant after thoughts in the mind of the doctor in charge of the case.

As to the relationship of the otitis media to the pneumonia.

1. It may in the first place be accidental, as when a child with otorrhœa develops pneumonia and the one condition may have little or no influence on the other.

- 2.—It may be secondary to the pneumonia. This is no doubt the commonest relationship of the two conditions. The pneumococcus brought into the pharynx by coughing gains access to the middle ear through the Eustachian tube and starts a suppurating inflammation there. The remembrance of this fact emphasises the need for antiseptic treatment of the mouth in cases of pneumonia, and especially so in the case of children.

The pneumococcus has frequently been found in the pus from otitis media in pneumonia.

3. The otitis media may be a primary manifestation of pneumococcus infection, and appear before there is any sign of any affection of the lungs, pneumonia occurring subsequently. This was so in case No. 6.

4. An ordinary attack of otitis media may give rise to general

pyæmia accompanied by pneumonia of the ordinary septic type.

I shall not say more of the first and fourth headings in this list, but confine myself to otitis media associated with pneumonia as suggested under headings Nos. 2 and 3.

SYMPTOMS OF OTITIS MEDIA COMPLICATING PNEUMONIA.

And now as to the symptoms which would suggest the occurrence of this complication in a case of pneumonia.

Firstly, no reliance can be placed upon the absence of the symptoms which are supposed (albeit wrongly so) *always* to accompany otitis media, viz., pain in the ear or side of the head, and deafness, and discharge from the ears. The first two when present are of value, but they are very frequently absent. If there be no myringitis, a suppurative otitis media can occur without causing any pain to the child. I have seen this in otherwise healthy children, and if pain is so little prominent in health, it is much less likely to make itself manifest in a child with all the discomforts associated with an attack of pneumonia. As regards deafness, the child may hear well enough with the sound ear to prevent attention being drawn to its deafness, and, moreover, its dulness of hearing may be considered a natural concomitant of the fever, and so escape due attention.

With regard to the discharge, this is, as a rule, of little value, so far as the treatment of the case is concerned, because as soon as the membrane is perforated and the discharge has commenced, the case is, as a rule, on the way to recovery. Pyæmia and death are most to be feared in cases where perforation does not occur, and the pus is pent up in the middle ear. These are the cases where timely recognition and incision of the membrane may save the life of the patient.

GENERAL SYMPTOMS.

Although we cannot rely upon special symptoms or ear disease in these cases of pneumonia, there are certain general symptoms which ought to arouse our suspicions, and make us

search for this complication. In the first place there are symptoms suggestive of an incipient pyæmic state.

The most frequent of these is slight pain, with or without tenderness in the limbs, such as might be easily overlooked or explained away as a "slight touch of rheumatism." This may be seen in the legs, or in the arms, and there may be a little swelling of a joint, or it may go on to a true pyæmic arthritis.

These symptoms in a case of pneumonia ought at once to arouse a suspicion of some focus of suppuration, more especially in young patients, and the diagnosis of rheumatism ought not to be made till the possibility of suppuration in the ears or elsewhere has been excluded.

ABDOMINAL SYMPTOMS.

Abdominal pain and tenderness, often accompanied by distension, has been a fairly prominent symptom in the cases I have seen, but much stress cannot be laid upon this, owing to the frequency with which pleuritic pain is referred to the abdomen in children, sometimes being accompanied by so much muscular rigidity that a right diaphragmatic pleurisy may, in a child, closely simulate peritonitis or perityphlitis. The same cannot be said of diarrhœa. This is an important symptom, and occurring about the fifth or sixth day of pneumonia in the case of a child, is very suggestive of some complication threatening pyæmia. There may also be tenderness or enlargement of the liver or spleen as in other septic cases.

SKIN ERUPTIONS.

Sometimes the presence of skin eruptions may call attention to the fact that something unusual is taking place. The most suggestive is the appearance of small boils singly or in crops, as in other cases of pyæmia. These ought not to be disregarded: they may be of no importance, but the occurrence of a few small boils and a little rheumatic pain in the legs may be the only sign that the patient is dying from a preventible pyæmia,

and not simply from the "virulence" of his attack of pneumonia.

Another type of eruption which I have seen is erythematous in nature, resembling somewhat small patches of erythema nodosum. In one case there was a raised urticaria like eruption on the face, having the distribution of lupus erythematosus, which disappeared as soon as the pus was released from the tympanum by incision of the membrane.

CEREBRAL SYMPTOMS.

Another important and most suggestive group of symptoms are those commonly associated with meningitis or meningeal irritation.

I have not infrequently seen in the class of case of which we are now speaking, an unusual degree of restlessness, although the child may have so much pain that he keeps his head or body still, he nevertheless is constantly throwing his arms and legs about.

Headache as I have already said may be entirely absent in these cases and its absence may be very misleading by suggesting the absence of any cerebral complications.

SPURIOUS MENINGITIS.

A train of symptoms closely resembling an attack of meningitis is one of the most important indications of a non-perforating suppurative otitis media, such as we are apt to see as a complication of pneumonia and some of the specific fevers. I have not a well marked case illustrating this train of symptoms among my cases of pneumonia, although I have seen them several times in cases of otitis media apart from pneumonia.

A very well marked case is however described by Dr. F. P. Ball of Pennsylvania, in a paper on this subject, which appeared in the *Medical News* for Sept. 21, 1895. The patient was a boy aged 6, who was taken suddenly ill with what seemed to be an attack of bronchitis with rather severe abdominal symptoms: pain, distension, diarrhoea, and occasional vomiting. The abdominal symptoms subsided on the third day and some signs

of pneumonia appeared. He became dull and stupid and passed into a state of unconsciousness accompanied by extreme restlessness. At the end of a week the cerebral symptoms had increased. The unconsciousness was so marked that the conjunctival reflex was lost. The presence of meningitis complicating broncho-pneumonia seemed quite certain to two physicians who were called into consultation on the case. By the tenth day the boy had become absolutely comatose. All his irritability and delirium had gone and the limbs were relaxed. The urine was passed involuntarily. When in this condition and when death was almost hourly expected, the boy suddenly improved and it was found that a free discharge of pus had taken place from one ear. From this time all the symptoms steadily subsided and the boy made a good recovery.

One of my cases shows some resemblance to this.

Case 1.—This is the case of a boy, J. D., aged 5, who was admitted to hospital complaining of pains in the head, side, and abdomen of two days' duration. The onset of his illness was sudden, commencing with headache, and pain of a pleuritic nature in the right side. There was also some vomiting. The onset was that of an ordinary case of pneumonia, with rather an excessive amount of headache and pain. The symptoms were also those of pneumonia—the respirations were 40, the pulse 120, and the temperature 102·8 F., and there was evidence of consolidation at the base of the left lung, and some medium râles at the base of the right lung. In spite of considerable dyspnœa, the child lay very still, as if he were afraid to move on account of pain and tenderness in his limbs and abdomen.

During the next three or four days his condition continued to get worse. The pain and tenderness in the limbs and abdomen increased, and the child was afraid of the slightest movement. There was retraction of the head and pain on bending it forwards, and the child was moaning with pain all day long, and slept very little at night. There was no unconsciousness or delirium.

The temperature, after reaching 104° F. on the day after admission had been steadily declining, and was down to 100 on the fifth day. Although the respirations had risen to 53 or 54 per minute, the pulse remained about 140. There was no localized pain or tenderness in the limbs at this time, although the child disliked having them moved. There was considerable abdominal tenderness, and some distension and hardening of the walls. The stools were loose and frequent. The abdominal symptoms became so severe that continuous cold was applied by means of an "ice coil," and the child lay so still, owing to his pain, that the retention of the coil on the abdomen was quite easy.

There was no complaint of any pain in the ears, and the child was not noticed to be deaf. On examining the ears, however, there were unmistakable signs of otitis media on the right side with some sero-purulent effusion.

Mr. Gamgee who saw the case with me made an incision into this ear and although there was no evidence of purulent discharge from the ear afterwards, the child seemed greatly relieved by the operation and slept well and quietly for the first time since admission. Next day the child was much better and the day following all signs of meningeal irritation had gone, as well as the abdominal pain and tenderness, and the child was bright and lively. The diarrhœa subsided on the third day after the incision, and the lungs speedily cleared up.

In this case we see pneumonia associated with meningeal irritation, marked abdominal tenderness, pain and distension, and diarrhœa. The symptoms rapidly subsiding after an incision of the right membrana tympani.

The explanation I give of this case may be doubted, and it may be questioned whether a simple incision of the membrane when not followed by a copious discharge of pus ought to be credited with the power of relieving cerebral symptoms. In answer to this I could point to cases where simple incision of the membrane, with or without the escape of a drop or two of

pus, has had the effect of at once relieving severe symptoms which, in two of the cases, had lasted for a week or more and had caused a diagnosis of meningitis to be made. It would perhaps be interesting in this connection to give some details of one of the cases, viz :—that of a boy (case 2). C. H., aged 14 years, admitted to the General Hospital Aug. 28, 1893. He was ill for a fortnight prior to admission, suffering from headache and “pains all over him,” general malaise and occasional vomiting. For the first two weeks after admission his symptoms were suggestive of meningeal irritation although there were no definite signs of meningitis.

There was no definite squint, but he suffered from slight epileptiform convulsions, in which he rolled his eyes a good deal. He could, however, stop these fits if told to. Both the optic discs were blurred at the margins and rather prominent. He suffered just as the last case did, from abdominal pain, tenderness, and distension, but there was no diarrhoea. The tongue was dry and raw. For the first week or more he had pains in his legs, and was very restless. There was no local symptom of any ear disease, but at the end of the second week I examined the ears and found that there was suppurative otitis on the right side, the membrane being bulged outwards by the pus. In view of the persistent head symptoms and the condition of the optic discs, it was decided, after a consultation with Mr. Haslam, to explore the mastoid sinus. This Mr. Haslam accordingly did with a negative result, and also found that the lateral sinus was quite healthy. A simple incision was made in the membrana tympani and a little pus escaped. After this, all the boy's symptoms rapidly subsided.

These cases will, I think, be sufficient to show that symptoms of meningitis may be caused by otitis media, apart from any actual spread of the inflammation to the meninges.

Before referring shortly to three more cases of otitis media complicating pneumonia, I give in tabular form the main symptoms of the six cases referred to in this paper.

SYMPTOMS OF CASES OF OTITIS MEDIA
COMPLICATING PNEUMONIA.

Case		Lobar = L. Broncho-pneumon. B.	Unusual restlessness.	Retraction of head.	Headache.	Pain in Limbs.	Tenderness in Limbs.	Abdominal tenderness.	Abdominal distension.	Diarrhoea.	Herpes Labialis.	Urticarial or Erythematous eruption.	Boils.	Ear Symptoms.	Result.
1.	J. D.	L	X	X	P	X	X	X	P	P	o	o	o	o	C
"	2. C. H.	?	P	P	P	P	o		P	o	o	o	o	o	C
"	3. J. Y.	B	P		P	P	P	P		o		P	o	P	C
"	4. E. W.	L	o	o		o	o	o		P		o	P	o	D
"	5. W. C.	L	X	X	X	P	o	P	P	P	o	o	o	o	D
"	6. H. D.	L	o	o	o	P	P	?		o	P	P	o	o	D

X means considerable. P = present. o = absent. ? = uncertain.
C = cured. D = died.

I will now say a word or two about two out of my five cases where skin eruptions were present. The first case is that of a girl, aged 10.

Case 3.—J. Y. In this case the illness began rather gradually, and there was, moreover, some complaint of deafness and of discharge from the right ear a month ago. The first symptoms were of sore throat and pains in the limbs, and the case was thought to be one of *rheumatism*. When admitted on about the ninth day of ill health, there were unmistakable signs of a diffuse pneumonic condition at the bases of both lungs; the pain and tenderness in the limbs was not of an ordinary rheumatic character, and the temperature was of a pyæmic type. There was, moreover, a symmetrical butterfly-shaped eruption on the cheeks and crossing the bridge of the nose. This was raised and reddish at the margin, bluer in the centre, somewhat of an urticarial type. There was, moreover, considerable abdominal tenderness, but no enlargement of the spleen or liver.

The tongue was furred, but moist. The patient was very restless.

On the day after admission I carefully examined the ears and found the scar of a healed perforation of the right membrane, from which she had the discharge a month ago. In the left, however, there was evidence of active inflammation. It was decided to incise the membrane.

The severity of all her symptoms immediately began to subside after the liberation of the pus from her ear, although the discharge was but scanty. The eruption, although it continued to spread slightly for a couple of days, became much paler.

The pain and abdominal tenderness subsided in twenty-four hours and the restlessness speedily disappeared. The lungs were not perfectly clear till ten days after the incision, and the tenderness of the thighs did not completely subside for more than one week. The child made a good recovery.

In this case the pneumonia was a much less prominent symptom than in the other cases previously referred to and was of a lobular rather than a lobar type. The subsidence of the symptoms after the relief of the tension in the tympanum was very striking.

In the case I shall next record, which is one the earliest of the series, I regret to say that in consequence of the total absence of any symptoms of ear disease, I failed to recognise the true nature of the case. The small boils, which might have given an indication of the nature of the case, were mainly on the lower part of the abdomen and the thighs were not so noticeable as if they had been on the upper part of the body.

I ought to have laid more stress upon the persistence of the pneumonia in a girl of good constitution, and the diarrhœa ought to have caused a suspicion of pyæmia.

Case 4.—A girl, E. W., aged 16, admitted to the General hospital, Oct. 8, 1894, suffering from shortness of breath and pain in the side. She was well nourished and well developed and had always been strong and well previously. Present illness began

with a rigor and pain in the left side three days prior to admission.

On admission she was evidently suffering from pneumonia, and the whole of the left lower lobe was found to be consolidated. There were no sputa. By the sixth day of the illness the affected lung showed no sign of resolution, and consolidation was commencing in the right lung. The patient also began to suffer from diarrhoea. Except for extreme dryness of the tongue, the condition of the patient did not seem very bad. Within the next day or two the heart showed signs of failure, but readily responded to digitalis, strychnine, and sodium nitrite. The condition of the lungs did not improve, the diarrhoea continued, and the patient gradually sank, dying on the twelfth day of her illness.

Post-mortem.—Some scars of recent boils on the body, and one of these on the left thigh containing pus. No pleurisy or pericarditis. There was marked pneumonia of both lower lobes, and the smaller bronchi contained fibrinous casts. Both middle ears were filled with pus, especially the left, and the ossicles were loose and showed rough surfaces. The tympanic membranes were not perforated.

In the following case early treatment of the otitis media did not suffice to prevent a spread of inflammation to the meninges.

Case 5.—W. C., aged 19, admitted Aug. 14, 1896, complaining of pain in the right side and feverishness of three days' duration. Illness began with cough, anorexia, and pleuritic pain. On admission he was found to have pneumonia at the base of the right lung and in the course of a day or two the lower lobe of this lung became absolutely consolidated although tubular B.S. was not audible for several days.

The patient seemed going on well till the sixth or the seventh day of his pneumonia, except for rather troublesome diarrhoea, although the lung condition remained stationary and his aspect was not very good. On examining his ears on the seventh day of his illness I found there was fairly acute inflammation of the right membrana tympani and together with some bulging of the

membrane. The membrane was incised the same day. After the incision the myringitis subsided and the membrane returned to its normal position. The incision healed in a day or two and there were no further signs of suppuration.

The patient remained in much the same state for some days after the incision into the membrana tympani, and then, on the 12th day of his illness, his left lung became affected and the whole of the lower lobe becoming consolidated and accompanied by extensive pleurisy.

The patient gradually got weaker, and on the seventeenth day of his illness he developed symptoms of meningitis which proved fatal in three days.

Post-mortem.—Both lungs were completely consolidated, except the extreme apex of the left lung and the lower lobe of the right lung. The lungs looked very grey, and a pus-like fluid could be squeezed from them. No signs of disease in middle ears. There was purulent meningitis at the base of the brain. This case seems to show that pyæmic symptoms may remain and death result from meningitis after the cessation of all ear symptoms.

In conclusion I have to refer to the last and perhaps the most striking of the cases I wish to speak of.

Case 6.—H. D., a strong and previously healthy boy, aged 10 years, of good constitution, was admitted to the General Hospital in October, 1895, under my care, suffering from pneumonia of about three days' duration. The illness began like an ordinary pneumonia. He suffered from headache and anorexia for thirty-six hours, and vomited once. Then, on the third day, he had a rigor and pleuritic pain began in the left side; he was moreover delirious at night, and had some cough. The headache passed off. On admission he complained of pain in his back and left leg as well as his side. There was herpes labialis on the right side, and all his symptoms were those of an ordinary lobar pneumonia, with the exception of the pain in the leg. There was consolidation of the base of the left lung, the cough was loose, and there were streaks of arterial blood in the sputa.

He made no complaint of headache, nor was there anything in his symptoms to draw attention to his ears.

The day after admission some patches of erythema appeared on the left leg, and the limb became more painful and somewhat swollen. A finger of the right hand then became swollen and painful, and there was a patch of erythema on the right foot. There were no inflamed lymphatics. I am sorry to have to confess that in the absence of any other symptoms I missed the true importance of these signs, otherwise I expect that I should have been able to save this boy's life. He died the third day after admission, apparently simply from the severity of his pneumonia.

Post-mortem.—The lower lobe of the left lung showed ordinary pneumonic consolidation, with some signs of breaking down, but in the right lung there were several small abscesses of an unmistakably pyæmic character. On searching for a cause for the pyæmia, "old foul-smelling pus" was found pent up in the right middle ear, the membrane not being perforated. There was no meningitis, but some congestion of the meninges. Here we see a strong healthy boy dying within six days of his being in perfect health, and less than four days from his initial rigor, from pneumonia which proved to be pyæmic in character. The condition of the middle ear seemed to indicate that the septic suppuration there was of longer standing than the pneumonia, and therefore a primary condition.

But whatever be the exact relation of the otitis media to the pneumonia it cannot be denied that a case like the one just recounted teaches us a most important lesson, for there is every probability that this boy's life would have been saved had exit been given immediately to the septic pus, which was pent up in this tympanic cavity.

There was in this case no headache, no distinguishable deafness, and no head pain or other symptom suggestive of any morbid process going on in the head. There was, however, a symptom which, had I known as much then as I do now, would have put me on my guard. I refer to the pain in his leg, of

which the boy complained on his admission to the hospital. This was thought to be rheumatic and its true importance was missed. The same is to be said of the erythema which, as already described, soon appeared, and also of the swelling in the small joints of his hands.

There may at first sight seem but little connection between pain in the limbs and ear disease, but from what I have already said it will be seen that this was the one symptom which might have led to a correct diagnosis of the cause of the severity of his attack and of the rapidity of the fatal result, for the progress of the case was more like what would be expected in a confirmed alcoholic of middle age rather than in a strong healthy boy of 10 years of age.

We must therefore recognise the possibility of acute pyæmic pneumonia, intimately associated with acute otitis media, occurring in a perfectly healthy boy and rapidly causing death. We must also recognise the possibility of such a dangerous otitis media occurring without a single ordinary symptom of ear disease, not even persistent pain in the head. We ought to recognise the desirability of examining the ears in every case of severe acute pneumonia in children and young people, or at all events, we ought to be carefully on the watch for any symptom suggestive of something unusual in our cases of pneumonia.

By so doing we may be fortunate enough to save now and again a fair young life which would otherwise be lost ; for the infrequency of these cases, combined with the slightness of the symptoms which give the clue to the real cause of their severity, render them most liable to be overlooked.

ALBUMINURIA OF OBSCURE ORIGIN OCCURRING IN A CASE OF THORACIC ANEURISM.

BY E. B. BOSTOCK, M.D., B.S. (LOND.),
RESIDENT MEDICAL OFFICER, THE JAFFRAY HOSPITAL ;

AND J. G. EMANUEL, M.B., B.S., B.SC. (LOND.),
PATHOLOGIST, THE GENERAL HOSPITAL, BIRMINGHAM.

WE are indebted to the courtesy of Dr. Rickards for permission to record this case.

T. M., aged 29, was admitted to the General Hospital, on November 28, 1900, complaining of cough, difficulty in breathing, and swelling of legs. Duration ten months.

Patient joined the army in 1889, previous to which time he had always enjoyed good health. He went to India with his regiment, and there had "fever" two or three times, and in 1897 was in Hospital for three weeks with rheumatism. He contracted syphilis in 1896, for which he had a month's treatment.

In 1899 he went with the Royal Artillery from India to South Africa, where he took part in several engagements, including that of Elandslaagte, and was in Ladysmith throughout the siege. He kept quite well until February 1900, when he had an attack of what he called "bronchitis," with cough and shortness of breath. He went into the Ladysmith Hospital, but did not improve to any extent. Swelling of the legs came on about a month after his admission to the camp hospital. At this time the amount of his urine was much diminished. He was invalided home in June, 1900. Since that time until his admission to the General Hospital at the end of November, his condition remained about the same, except that he noticed that his arms and left side of neck and face became swollen, and that he could not lie down to sleep with any comfort.

The family history was of little importance. His father and

all his brothers and sisters were living and in good health. His mother died of pneumonia.

The patient was a married man but had no children.

The patient was admitted to the General Hospital under Dr. Rickards on November 28th, 1900, where he remained until January 11th, 1901, when he was transferred to the Jaffray Hospital.

While at the General Hospital, his most prominent symptoms were shortness of breath with occasional stridor, a frequent cough with muco-purulent expectoration, and considerable œdema of legs and lower part of back, with less marked œdema of upper extremities. The urine varied in amount from 78 to 16 ounces, but on the whole was rather in excess of the normal. The urine was acid, s.g. 1020, and contained from '3 to '6 per cent of albumen.

During the six weeks patient was at the General Hospital, the urine was examined daily, and traces of blood were found on three occasions only. Casts were never found though frequently sought for.

The case was diagnosed by Dr. Rickards as one of aneurism, and was transferred to the Jaffray Hospital on January 11th, 1901. His state on admission was as follows:—

He was a well developed, well nourished man, weighing 11 stone. He was slightly cyanosed and could not lie down with comfort. He could not sleep unless he sat up in bed and leant forward. Breathing was rather laboured and stridor was nearly constant, being much increased when he was asleep. There was occasional cough with some small amount of muco-purulent expectoration. There was very marked œdema of legs and lower part of back, and some ill-defined swelling of left arm, left side of neck and face.

The chest was well developed, and breathing was not difficult, except in the recumbent position or after any exertion or change of posture.

There was no glandular enlargement. The superficial veins over the upper part of the left chest and the left deltoid were

markedly enlarged, and the attachment of the diaphragm on the left side was marked out by the dilatation of the superficial venules. The superficial veins of the neck were also engorged.

Rather more blood seemed to pass through the right radial artery than through the left, but no corresponding difference could be made out as regards the carotid arteries. There was no tracheal tugging. The pupils were equal.

On percussion of the chest there was an area of marked dulness, which extended over the manubrium sterni and the inner third of the first and second left interspaces. Downwards this dulness was continuous with the heart dulness. No pulsation could be seen or felt over this area. Elsewhere the chest was resonant to percussion, with the exception that the note over the left upper lobe was duller than over other parts of the lungs.

On auscultation there was marked stridor, both inspiratory and expiratory, which could be heard all over the chest, and which became more marked if patient lay down while being examined. The entry of air appeared good, except over the left upper lobe, where the breath sounds were very deficient. Moist sounds were heard at both bases.

On laryngoscopic examination, the vocal cords were seen to move freely and equally, and the mucous membrane of the larynx seemed normal in appearance.

The pulse was nearly always over 100, and was quite regular. The right radial seemed rather fuller than the left. The heart's impulse was best felt in the fifth space, just internal to the nipple line, and was located with some difficulty. There was no other pulsation over peccordial region.

The cardiac dulness was limited by the nipple line to the left and by the right edge of the sternum to the right; above it merged in the dulness over the manubrium and the upper left interspaces.

The heart sounds were clear, but not very loud, and no murmurs were heard over any part of the precordia, nor over the dull area covering manubrium and the two upper left spaces.

The abdomen was rather resistant to palpation; but was resonant all over. The liver dulness in the nipple line extended from the sixth rib to one inch below the costal arch. The spleen was not palpable.

The urine measured about 45 ozs. daily, was acid, and contained '6 % albumen. No blood was present and no casts were found.

There was very marked œdema of the legs and feet, with some of the lower part of the back, but no œdema of the scrotum or abdominal wall.

The puffiness of the left side of the face, neck and left arm seemed due rather to venous engorgement than to œdema. The eyelids and face generally were not œdematous.

Further Progress:—The patient's condition and physical signs showed very little alteration, but on March 15th, two months after his admission to the Jaffray Hospital, a bruit was heard for the first time. It was heard on listening close to the spine from the second to the sixth dorsal vertebra and was systolic in time, the second sound of the heart being heard quite distinctly. A systolic murmur could also now be heard over the manubrium but was of less intensity.

During the next fortnight, patient had free diuresis, passing from 70 to 98 ounces of urine in 24 hours, and the œdema of legs nearly disappeared. He lost 22 pounds in weight during this fortnight. This loss represented the amount of dropsical fluid removed by the kidneys.

On March 29th, he had a rigor with a rise of temperature to 102° F., followed by pain and oppression in chest and much increased expectoration.

On April 6th and 7th, he had severe rigors, the temperature on the 7th reaching 106° F. These were accompanied by increased cyanosis and difficulty of breathing.

During the next six weeks he slowly improved, the breathing becoming easier and the stridor less marked. The urine, however, remained scanty at first, rarely reaching 20 ounces per diem, and containing 1 per cent. albumen. Later, it

became more in amount but still contained a large amount of albumen, 1.1 to 1.5 per cent.

No casts were found in spite of repeated search. The systolic murmur became louder and could be heard nearly all over the precordia.

For a week before his death, which took place on June 2nd, he had increased stridor and cough, and slept badly, becoming intensely cyanosed except when sitting up in bed. He died rather unexpectedly after an hour's greatly increased difficulty of breathing.

Some difficulty in swallowing was noticed a few hours before death, but throughout his illness deglutition had not been interfered with. There was never any marked pain in chest, nor in neck, nor down arm, but only a feeling of oppression and tightness.

For the first two months after his admission to the Jaffray Hospital, he was treated with increasing doses of iodide of potassium, but without apparent benefit. Later, treatment was mainly symptomatic.

AUTOPSY.

External Appearances.—The body was that of a well developed, well nourished, and muscular man of 29. There was much oedema of feet, legs and thighs. The scrotum, trunk, arms and face were free from oedema. There was fulness of the neck, but no actual oedema. There was a cicatricial scar on the glans penis just behind the frænum.

Internal appearances.—The superior mediastinum was found to be occupied by a hard irregular mass, adherent to the posterior surface of the manubrium, which proved to be a large aneurism springing from the arch of the aorta. The heart occupied its normal position. The right lung was not affected by the aneurism, but there was obvious encroachment on the upper lobe of the left lung. The aneurism was of large size, equal to that of a foetal head and considerably larger than the heart itself. Its greatest breadth was $4\frac{3}{4}$ inches, and its

greatest antero-posterior diameter was $4\frac{1}{2}$ inches. It arose from the upper surface of that part of the arch of the aorta that lies between the attachment of the pericardium to the great vessels and the origin of the left sub-clavian artery. It lay entirely outside the pericardium. The left sub-clavian artery arose from the arch of the aorta and formed an immediate left boundary to the sac. The left common carotid and the innominate artery arose from the sac itself. The aneurism was sacculated and it communicated with the aorta by a circular well defined smooth edged ring about $1\frac{1}{2}$ inches in diameter. The aneurism had something the shape of a truncated cone, the base being above and in front, the apex, its origin from the arch, below and behind. It had grown immediately upwards and forwards from the arch and had expanded mainly in three directions, forwards, backwards, and to the left. The portion which had grown forwards had come into direct contact with the manubrium sterni and the inner ends of the two upper left intercostal spaces. It had eroded the periosteum of the manubrium. That portion which had grown backwards had come into contact with the trachea at its bifurcation, and about three inches of the lower end of the trachea immediately above the bifurcation. This portion of the trachea as well as the left bronchus was very markedly compressed from before backwards. The portion of the aneurism which had grown towards the left side was firmly adherent to the pleura over the upper lobe of the left lung.

The superior vena cava ran along the right border and the left innominate vein ran along the superior and anterior border of the sac. Both these vessels were flattened out over the aneurism but their lumina were patent. The position of these vessels was such that while the aneurism compressed both vessels to a certain degree it affected the left innominate vein more than the superior vena cava.

The right pulmonary artery and veins were free from pressure. The left pulmonary artery and veins were compressed, along with the other structures in the left root.

The recurrent laryngeal nerves had escaped compression, and the phrenic nerves and the vagi while they lay embedded in the walls of the sac could be traced to their terminations intact.

The œsophagus was free from pressure.

The wall of the sac was extremely thin. That part which was in contact with the thoracic wall, however, was lined by dense white laminated clot two inches in thickness, so that pulsation transmitted to the front of the chest wall would be impossible. The part which lay in contact with the trachea and left bronchus was thin walled, and no doubt capable of varying degree of distension during life. The inner surface of the pericardium was quite healthy. The heart—which was not separated from the aneurism for the purpose of weighing—was quite healthy and of normal size; if anything, it was a small heart for the size of the cadaver. All the valves were quite healthy, including the aortic. The intra-pericardial portion of the aorta was free from atheroma. Throughout the rest of the aorta there were isolated patches of atheromatous degeneration, most marked immediately above the bifurcation into the common iliac arteries. The aorta resembled the heart in respect to its small size. Its calibre was undoubtedly smaller than normal. There were no dilatations other than the aneurism already described.

The jugular and innominate veins and their tributaries were much engorged with dark fluid blood.

The right pleura was healthy. The right lung was crepitant, but very congested. The pleura over the upper lobe of the left lung was thickened, and adherent to the chest wall and the aneurismal sac; that over the lower lobe was healthy. The left lung was crepitant, but very congested. The upper lobe, although it was crepitant, did not contain a normal amount of air. There was no bronchiectasis in either lung.

The liver, which weighed 92 ounces, was large and dark in colour. There was no perihepatitis. Its surface was marked by a number of linear and stellate depressions. The section

showed numerous small gummata of recent formation varying in size from that of a pin's head to that of a small pea. These gummata showed no signs of caseation. The consistence of the liver was normal.

The spleen weighed 10 ounces, was large, and contained a gumma the size of a pea. There was some thickening and opacity of the capsule. The section of the spleen showed it to be a typical sago spleen. The consistence of the spleen was soft.

The right kidney weighed 12 ounces, and the left kidney 11½ ounces. Each kidney was of very large size. The capsules were thin and stripped easily, leaving a finely granular surface. The colour of the kidneys both on surface and on section was unusually dark. The section showed an increase in the size of the cortex, but no other naked eye change.

The liver, spleen, and kidneys, all gave a marked amyloid reaction with tincture of iodine.

All the other organs were healthy.

Microscopical sections were made of the liver, spleen, and kidneys. Briefly these showed :—

(a) In the liver—1, Well marked amyloid degeneration chiefly in the capillaries of the middle zones of the lobules, but also to a less extent in the capillaries of the peripheral zones. 2, Gummata of recent formation. 3, A slight formation of young fibro-cellular tissue confined to the portal canals—a commencing cirrhosis.

(b) In the spleen—1, Well marked amyloid degeneration of the outer portion of the Malpighian bodies and of the small arteries lying in the centre of these bodies. 2, That the gumma described above was undergoing fibrous infiltration.

(c) In the kidneys—1, Well marked amyloid degeneration practically confined to the glomeruli in the cortex, the vasa recta in the pyramids, a few medium-sized intertubular vessels, and some of the afferent vessels to the glomeruli. 2, Marked changes in the glomeruli; all the glomeruli had thickened capsules, and in some this thickening was extreme, consisting of

laminated well formed fibrous tissue; all the glomerular tufts had undergone more or less amyloid degeneration, and some were completely disorganised. 3, The tubules remarkably free from change; though the tubules showed some granularity of their cells, there was no proliferation or desquamation of the tubular epithelium. 4, The interstitial connective tissue increased by extensive strands of young celled delicate fibrous tissue lying mostly in the cortex, especially in the neighbourhood of the glomeruli. 5, That the vessels apart from the amyloid degeneration already noted in the smaller ones were healthy, certainly they showed no peri- or end-arteritis. 6, That the capsules were thin, but that from their inner surface many of the strands of young fibrous tissue described above started.

We deem the case worthy of record for the following reasons :—

1. While at the autopsy we were able to confirm the diagnosis of an aneurism of the arch of the aorta compressing the trachea, we found that the albuminuria and œdema were due to widespread lardaceous disease.

2. Although text-books give an equal prominence to chronic tuberculosis and to syphilis as causes of lardaceous disease, such marked lardaceous disease as that met with in the above case is in our experience rare as a result of undoubted and uncomplicated syphilis.

3. In the spleen, according to Coates, at all events, syphilis generally produces the diffuse form of amyloid spleen, while tuberculosis gives rise to the sago spleen. In the above case the latter form, the sago spleen, was met with and the cause, we must assume, was syphilis.

4. The case proves that lardaceous disease of the kidneys by itself will not give rise to hypertrophy of the left ventricle.

5. Such marked visceral lesions as the above, especially gummata in the spleen, are not commonly seen as a result of syphilis acquired locally. In this case the syphilis was contracted in India.

6. The microscopical examinations of the kidneys explained exactly the clinical features of the urine: the extensive glomerular degeneration accounted for the albuminuria, while the slight amount of tubular change corresponded to the absence of casts.

7. The case goes to prove a not too generally accepted fact, that an aneurism *per se* does not cause hypertrophy of the left ventricle. When hypertrophy of the heart accompanies aneurism, either incompetence of the aortic valves or wide spread arterio-sclerotic changes are found.

8.—The rigors which occurred during the course of the disease we consider were due to accumulation of muco-purulent secretion in the bronchial tubes owing to the compression of the trachea by the aneurismal sac.

NOTES ON A SERIES OF CASES OF NEPHRITIS,
WITH SPECIAL REFERENCE TO PROGNOSIS
AND TREATMENT.

BY JAMES W. RUSSELL, M.A., M.D. (CANTAB.), M R.C.P.,
ASSISTANT PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

THE cases on which this paper is based were treated at the Jaffray Suburban Hospital. Thirty-five cases of nephritis have been transferred there from the Birmingham General Hospital during the past $8\frac{1}{2}$ years, and as some of these remained under treatment for a lengthened period I have thought it worth while to analyse the results with special reference to the effect of treatment, both on the immediate course of the case and on its future prospects. Some of these cases were under the care of Dr. Short, with whom I share the charge of the medical beds, and I am indebted to him for permission to refer to his cases.

Twenty-one of the thirty-five cases appear to have been instances of primary acute nephritis at the time of their admission into the General Hospital. With two exceptions, the age of none of these patients exceeded 25 years, and the great majority were under 20 years of age. The two exceptions were those of a woman aged 42, and a man aged 39; and, though I am aware that their ages are against the idea of a primary nephritis, I can find no other evidence to the contrary, and have therefore included them in the acute category. The remaining fourteen cases were examples of acute or sub-acute attacks occurring in patients with previously damaged kidneys, and in these the age, with only two exceptions, exceeded 30 years. In the two exceptions there was a definite history of a former attack of nephritis.

Of the patients admitted into the General Hospital for acute

nephritis five died in the Jaffray Hospital. Brief details of these cases are as follows :—

Case 1. Ernest A., aged 14, admitted into the General Hospital on July 16th, 1892, with œdema and purpuric rash of $3\frac{1}{2}$ months' duration. Transferred to the Jaffray Hospital on September 2nd. There was then no œdema, but a fading purpuric rash was present on the legs and thighs. The urine amounted to 40 ounces in the 24 hours, and contained a dense cloud of albumen, some blood and numerous granular, epithelial and blood casts. Specific gravity was 1015. Fresh outbreaks of the eruption appeared on Sep. 9th, 15th and 29th, Oct. 13th, 24th, 27th and 29th, and Dec. 13th, often accompanied by increase in the amount of blood in the urine. Violent attacks of vomiting occurred on Nov. 11th and 23rd, each lasting several days and accompanied by considerable abdominal pain, and on Dec. 5th there was a sharp attack of laryngitis. At 5 a.m., on Jan. 21st, 1893, the patient developed a left hemiplegia without loss of consciousness. Two hours later he had recovered the use of the arm and leg, and had passed 8 ounces of urine, but he was then seized with violent epileptiform convulsions, which were repeated at 10.30 a.m. and 1.30 p.m. He remained in a semi-conscious condition until his death the following day. *Post-mortem*, the kidneys weighed four ounces, and were very pale. The pathologist's diagnosis was "chronic parenchymatous nephritis."

Case 2. Thomas G., aged 5, admitted into the General Hospital on Jan. 26th, 1895, for œdema of one week's duration. Transferred on May 31st. On April 27th, one month before transference, a left sided empyema was opened, which continued to discharge up to the time of his death. On admission into the Jaffray Hospital, there was general œdema. The urine was generally passed into the bed, but on the few occasions on which it was all collected, it amounted to from 12 to 18 ounces, with specific gravity varying from 1018 to 1030. It contained a dense cloud of albumen, blood, and numerous casts. On June 7th and July 16th, there were uræmic convulsions

followed by left-sided paralysis. The œdema steadily increased, and the child died, without any further uræmic symptoms, on January 30th, 1896, 52 weeks after his first admission into hospital. No *post-mortem* examination was allowed.

Case 3. Amelia F., aged 18, admitted into the General Hospital on July 8th, 1893, with acute nephritis of three weeks' duration. Transferred, August 18th. Three days after transference, the patient vomited, and there was marked increase in the œdema and in the quantity of blood in the urine. On Sep. 5th and 6th, attacks of severe uræmic dyspnœa occurred, and the patient died on September 10th, after nine weeks of hospital treatment. *Post-mortem*, typical large white kidneys were found.

Case 4. Ada T., æt. 42, admitted into the General Hospital on July 25th, 1893, for nephritis of three months' duration. Transferred on November 10th. Previous to transference she had suffered much from headache and vomiting, and it had been necessary to tap the abdomen. On arrival at the Jaffray Hospital the urine measured about 30 ounces in the twenty-four hours and contained a dense cloud of albumen, but there was no blood. Granular and epithelial casts were present. The amount of œdema tended steadily to increase, and the legs were punctured several times. There were occasional attacks of vomiting. On February 16th, 1894, she was seized with a very severe attack of dyspnœa, which was relieved by venesection. Southey's tubes were again inserted into the legs, and 68 ounces of fluid removed. From this time the attacks of dyspnœa frequently recurred, and the patient died on May 7th, forty-two weeks after her admission into hospital. *Post-mortem*, the left kidney weighed $4\frac{1}{2}$ ounces, and its cortex was a little diminished; the right kidney weighed 6 ounces, and had a slightly enlarged cortex. In both the capsule was somewhat adherent, and left a granular surface after stripping.

Case 5. Nellie R., æt. 8, admitted into the General Hospital on Dec. 2nd, 1898, and transferred on February 24th, 1899.

The notes are extremely meagre, but death appears to have occurred from exhaustion on June 14th, after twenty-eight weeks of treatment. *Post-mortem*, the ordinary appearances of sub-acute parenchymatous nephritis were observed.

It thus appears that three of the patients died directly from uræmia, at intervals of forty-two, twelve, and fifty-five weeks respectively, after the commencement of their illness. The other two seem to have died more from water-logging than from uræmia. One of these had been ill fifty-three weeks.

Case. 6. One other case may be specially noted, in that the patient left the hospital apparently cured. She was treated in the General Hospital for four weeks, and in the Jaffray for eight, and on her discharge the urine had been free from albumen for several weeks. She had been ill four weeks before admission.

Of the remaining fifteen patients suffering from acute nephritis, ten left the hospital with only a trace of albumen in the urine. The following table gives the essential details of these cases :—

No. of Case.	Sex.	Age.	Duration of Illness.	Duration of Hospital Treatment.
7.	M	19	8 weeks	7 weeks.
8.	M	19	About 13 weeks	10 weeks.
9.	F	18	10½ weeks	10 weeks.
10.	M	16	10½ weeks	10 weeks.
11.	M	13	25½ weeks	25 weeks.
12.	M	7	12½ weeks	12 weeks.
13.	M	39	18½ weeks	17 weeks.
14.	F	10	33 weeks	32 weeks.
15.	M	7	17½ weeks	17 weeks.
16.	M	25	32 weeks	24 weeks.

In order to ascertain to what extent these patients could be considered as cured, and in how many the kidneys were permanently damaged, I have endeavoured to trace their after-history ; but, owing to the frequent change of address which

takes place amongst the working classes, all my letters, with three exceptions, were returned by the post office. The after-history of these three cases is as follows :—

Case 12. The patient had remained in good health, and had had no further symptoms of nephritis. He had left the Hospital $7\frac{1}{2}$ years ago. He did not, however, come up for examination, and I cannot therefore speak from personal observation.

Case 13. The patient was seen by me on March 2nd, 1901, six years after his discharge from the Jaffray Hospital. He had remained in excellent health and appeared to be well at the time of observation. The left ventricle, however, was a little hypertrophied, the pulse tension was slightly above normal, and the urine still contained a trace of albumen. The specific gravity was 1012. In all probability, therefore, the kidneys had received some permanent damage.

Case 16. The patient was seen on Feb. 23rd, 1901, nearly 5 years after discharge. He also was in good health, and had had no return of symptoms. The urine had a specific gravity of 1010, and was free from albumen. I was inclined to think, however, that the left ventricle showed slight signs of hypertrophy.

The remaining 5 patients, who were admitted for acute nephritis, left the hospital with a definite amount of albumen in the urine :—

	Sex.	Age.	Duration of Illness.	Duration of Hospital Treatment.	Albumen at Discharge.
Case 17.	M	14	$13\frac{1}{2}$ weeks	10 weeks	Dense cloud.
Case 18.	M	20	21 weeks	20 weeks	Cloud.
Case 19.	M	25	23 weeks	22 weeks	·05 to ·1 %.
Case 20.	F	10	32 weeks	20 weeks	Dense cloud.
Case 21.	M	22	20 weeks	18 weeks	·02 %.

Of these cases, I have been able to trace the after-history of two :—

Case 18. The patient was seen on Feb. 25th, $7\frac{1}{2}$ years after discharge. He appeared to be in good health, and had had

no further symptoms. The urine had a specific gravity of 1016 and contained .025 per cent. of albumen. I could find no casts, but the left ventricle was somewhat hypertrophied.

Case 19. The patient had died some time ago, but I was able to obtain no information as to date or immediate cause of death.

If the results in the five cases of which the after-history has been obtained can be taken as any guide to the results of the whole series, they are by no means discouraging, for only one of the five patients has died, and the other four have remained in good health after periods varying from 5 to 7½ years from the time of their discharge. Two, however, still had some albuminuria, and a third, though free from albuminuria, probably had some permanent damage to the kidneys. The condition of the fourth cannot be stated with certainty. It must be remembered, however, that these favourable results can at best only apply to the prognosis of cases in which the patients do not succumb directly to their disease, for if the five deaths which occurred in hospital be included, the death-rate becomes a very heavy one. But this death-rate would be at least equally misleading, seeing that most of the fatal cases were sent to the Jaffray Hospital because of their need for prolonged treatment—or, in other words, on account of their severity.

There remain fourteen cases who came into hospital for acute attacks of nephritis supervening on previously damaged kidneys :—

Case.	Sex.	Age.	Previous History,	Duration	Duration	Albumen at Discharge.
				of Illness. Weeks.	of Hospital Treatm't. Weeks.	
22	F	34	Indefinite	27	25	Dense cloud.
23	M	34	„	28½	27	Cloud.
24	M	50	„	17	14	{ Haze. Trace of blood.
25	M	65	„	?	10	Trace.

Case.	Sex.	Age.	Previous History.	Duration of Illness.	Duration of Hospital Treatm't.	Albumen at Discharge.
				Weeks	Weeks.	
26	M	58	Indefinite	11	10	Trace.
27	M	37	{ Attacks 3 yrs. and 1 yr. previously }	15	9	2 per cent.
28	M	55	Indefinite	?	18	None.
29	M	31	Attack 1 yr. ago	18	16	025 per cent.
30	F	36	Attack 15 yrs. ago	15	14	{ Trace. Trace of blood.
31	M	40	Indefinite	36	24	12 per cent.
32	F	16	Attack 6 yrs. ago	73	61	2 per cent.
33	M	32	{ Attacks 1 and 4 yrs. ago }	?	16	Died.
34	M	40	Indefinite	29	19	Cloud.
35	F	12	Attack 5 months ago	21	20	6 per cent.

In case 33 the patient died in the Jaffray Hospital. He had twice been an in-patient in the General Hospital four years and one year previously, and had never quite lost his œdema since he was last under treatment. He had been in hospital sixteen weeks.

Post mortem, the right kidney was found to be replaced by a mass of fibrous tissue, in the centre of which was a large uric acid calculus. The left kidney weighed 10½ oz : the capsule was adherent, and when stripped left a granular surface. There was much fatty change. The case was thus not an uncomplicated one of nephritis. No symptoms of calculus had been complained of during life.

The after-history of six of the remaining patients was more or less successfully traced :—

Case 22. Information was obtained that the patient died six years ago, about two years after leaving the hospital. The case was clinically one of chronic tubal nephritis, of which it was impossible to trace the onset. Death occurred a little less than three years after the first appearance of symptoms.

Case 27. The patient was re-admitted into the General Hospital a year after his discharge, and again came out to the Jaffray Hospital; but I have been unable to obtain any further history. Two previous attacks had occurred, one and three years ago respectively. The patient had been a heavy drinker, and was suffering from chronic tubal nephritis.

Case 29. The patient was seen by me on February 21st, 1901, and had remained in good health since leaving the hospital. The urine had a specific gravity of 1020, and contained no albumen, and I could not detect any alteration in the size of the heart. The case is included in the present category from the fact that he was an in-patient in the General Hospital a year previously for a similar attack. Nearly five years had elapsed since his discharge.

Case 31. The patient died in the Workhouse Infirmary in August, 1897, less than a year after leaving the Jaffray Hospital, and about twenty months after the first onset of symptoms. The case was complicated by the fact that the urine was foul and contained pus, but it was never under my own care, and I cannot express any opinion as to the diagnosis.

Case 32. The patient has remained under constant out-patient treatment since leaving the hospital, two years ago, and has twice been readmitted into the General Hospital. She was seen by me on February 21st, 1901. The urine contained 6 per cent. of albumen. The left ventricle was enlarged, and there was some oedema of the legs. The first attack of nephritis had occurred eight years before her first admission, after an attack of scarlet fever.

Case 35. The patient was seen on February 23rd, twenty months since her discharge. There had been no definite recurrence of symptoms, but she was an unhealthy looking girl, with sallow complexion and dilated venules on the cheeks. The left ventricle was hypertrophied, and the arteries thick, with raised tension. The urine was almost solid on boiling. The first attack of nephritis had occurred eight years previously, after scarlet fever.

The results in these cases, so far as they have been ascertained, are far from good, and stand in marked contrast to those of the former series. Three patients had died, about 4, 3, and $1\frac{1}{2}$ years respectively after the first appearance of symptoms. Two others came rapidly under treatment again for recurrence of their symptoms, one being now in a very precarious condition, and the sixth clearly cannot have very long to live. One patient only has remained in good health. The patients who have died or who have done badly, all left the hospital with quantities of albumen varying from .2 to 1.2 per cent. The patient who is in good health had only .025 per cent. of albumen on leaving the hospital.

Comparing the results in the two series, it would appear that the occurrence of an acute or sub-acute attack in cases in which a previous acute nephritis has left permanent damage to the kidneys is an element very seriously affecting the prognosis. In all probability the same is true of cases of chronic nephritis in which there is no history of any acute attack.

EFFECTS OF TREATMENT.

Although it can hardly be expected that the effect of the various methods of treatment should be definitely brought out by analysis, it is worth while to make some attempt in this direction.

1. *Effects of Early Hospital Treatment.*—Contrasting the acute cases in which only a trace of albumen was present on discharge with those in which the amount of albumen was considerable, it is noticeable that the average duration of illness before admission into hospital in the former was 1.7 weeks as compared with an average of 3.8 weeks in the latter, five of the former patients having been admitted within three or four days of the onset of their illness. These figures, however, are somewhat misleading, for the excess of the period in the second series over that in the first, is mainly due to the fact that one of the five patients had been ill for 12 weeks before admission. Moreover, the patient

who left the hospital apparently cured, had been ill for 4 weeks before admission, whilst the patient who was found to be free from albuminuria 5 years after his discharge, had been ill for 8 weeks at home before coming into the hospital. Four of the five patients who died in the Jaffray Hospital had previous histories amounting to 1 week, 3 weeks, 3 months, and 3½ months respectively.

Of the patients who came in with acute attacks supervening on previous kidney disease, the average duration of illness before admission in the 11 cases in which it could be ascertained, amounted to 4·6 weeks. The individual figures are again, however, inconclusive, for the two patients who died shortly after their discharge, had been ill 2 and 12 weeks, and the two who are now in bad condition, 1 and 12 weeks respectively; the patient (29), who appears to be now in good health, came into hospital two weeks after the onset of symptoms. It is not perhaps surprising in these cases of old kidney disease that the effect of early hospital treatment should be somewhat indefinite.

2. *Effects of Rest in Bed.* Acute cases: Of the patients who died in hospital three were kept in bed throughout their illness. The notes are silent on the point in one, and in the remaining case the patient was kept in bed throughout with the exception of a fortnight previous to his transference to the Jaffray Hospital.

The following table gives the time spent in bed in the two hospitals in all cases in which information is forthcoming, and the result at time of discharge as far as the condition of the urine and the weight of the patients are concerned.

(1.) Acute cases leaving hospital with only a trace of albumen :—

Case.	Previous duration. Weeks.	Bed (General). Weeks.	Bed (Jaffray). Weeks.	Albumen.	Weight.
8.	3	4	0	From cloud to trace.	Gained 5lbs.
9.	$\frac{1}{2}$	$4\frac{1}{2}$	0	Dense cloud to trace.	„ 15lbs.
10.	$\frac{1}{2}$	6	2	Cloud to trace	Stationary.

Case.	Previous duration. Weeks.	Bed (General). Weeks.	Bed (Jaffray). Weeks.	Albumen.	Weight.
*12.	$\frac{1}{2}$	6 $\frac{1}{2}$	0	Dense cloud to trace.	Gained 11lb.
*13.	1 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	·8 per cent. to trace.	„ 4lbs.
14.	1	5	0	·4 per cent. to trace.	„ 13lbs.
15.	$\frac{1}{2}$	2 $\frac{1}{2}$	0	Cloud to trace	„ 9 $\frac{1}{2}$ lbs.
*16.	$\frac{1}{2}$	0	0	·35 per cent. to trace.	„ 11lbs.

(2.) Acute cases leaving the hospital with considerable albuminuria :—

Case.	Previous duration. Weeks.	Bed (General). Weeks.	Bed (Jaffray). Weeks.	Albumen.	Weight.
17.	3 $\frac{1}{2}$	8	?	From ·4% to ·3%	Gained 5lbs.
*19.	1	Throughout	6	From ·5% to ·1%	?
21.	2	? Throughout	6	From ·5% to ·02%	Gained 25lbs.

Although the value of rest in bed in cases of acute nephritis is beyond dispute, it cannot be claimed that this is proved by these tables, the patients who left hospital with a distinct quantity of albumen in the urine receiving more prolonged treatment in bed than those who were discharged with a small quantity only. The explanation, however, may well lie in the greater severity of the kidney mischief in these cases, and therefore in their diminished response to treatment. It is noticeable, however, that the patient (No. 16) who was seen by me five years after his discharge and was found to be free from albuminuria, was not kept entirely in bed in either hospital. The majority of the cases in the first series were so far advanced towards recovery at the time of their transference that it was not found necessary to keep them in bed at all in the Jaffray Hospital.

The patient who left the hospital without any albumen and was supposed to be cured, spent only two weeks in bed at the General Hospital.

* The cases marked with an asterisk in this and following tables are those in which information as to the after-history has been obtained. Details of this information have already been given.

In only two cases have I been able to obtain measurements of the quantities of albumen immediately before and after getting up. In one of these the quantity diminished from .5 per cent. to .3 per cent. during the first few days after the change, and in the other it remained stationary. The almost constant gain in weight seems to bear no relation to the length of treatment in bed.

(3.) Chronic cases :—

Case.	Age.	Bed	Bed	Albumen.	Weight.
		(General). Weeks.	(Jaffray). Weeks.		
22.	34	1	0	Stationary.	Gained 9lbs.
23.	34	2½	16	Consid. diminution.	„ 22lbs.
24.	50	4	4	Cloud to trace.	„ 9lbs.
25.	65	3	0	Dense cloud to trace.	„ 3lbs.
27.	37	3	0	Dense cloud to .2 %.	„ 6lbs.
28.	55	2	0	.15 % to trace.	Lost 6lbs.
29.	31	6	2	.25 % to .025 %.	„ 6lbs.
30.	36	2	8	Cloud to trace.	Gained 11lbs.
31.	40	6	0	1.8 % to 1.2 %.	„ 7lbs.
32.	16	9	0	1.1 % to .2 %.	„ 4lbs.
35.	12	6	4	.8 % to .6 %.	?

These cases show perhaps a little more relation between length of treatment in bed and improvement in the condition of the urine. In one case only can the effect of the getting up be traced, the albumen diminishing from .05 per cent. to .03 per cent. in the first five days after leaving bed.

3. *Effects of Diet.*—The two series of acute cases may be placed side by side with regard to the length of time during which the patients were kept on a milk or farinaceous diet. In nearly all the cases the diet was then gradually increased to fish, chicken, and in a few cases to meat.

1. *Left Hospital with trace of Albumen.*

Case.	Period of Low Diet.	Case.	Period of Low Diet.
†1.	6 weeks.	10.	2½ weeks.
†2.	Nearly throughout.	11.	5 weeks.

Those marked † died in hospital.

Case.	Period of Low Diet.	Case.	Period of Low Diet.
†3.	Nearly throughout.	*12.	7 weeks.
6.	1 week.	*13.	15 weeks.
7.	0	14.	8 weeks.
8.	1 week.	15.	2½ weeks.
9.	2 weeks.	*16.	0

2. Left Hospital with distinct Albuminuria.

Case.	Period of Low Diet.	Albumen at Discharge.
17.	1½ weeks	Dense cloud.
*18.	7 weeks	Cloud.
*19.	4½ weeks	·1%.
20.	4 weeks	Dense cloud.
21.	3 weeks	·02%.

None of the patients were kept on low diet in the Jaffray Hospital with the exception of Nos. 14, 16, 18, and 21.

With the exception of the fatal cases, which were from the first intractable to treatment of any sort, and from which, therefore, it is not possible to draw any conclusions, the patients who did best were on the whole on low diet for a somewhat longer time than those who left hospital with evidence of serious permanent damage to the kidneys.

3. The chronic cases stand as follows in this matter :—

Case.	Period of Low Diet.	Urine at Discharge.	Case.	Period of Low Diet.	Albumen at Discharge.
*22	0	Dense cloud	*29	2½ weeks	·025%
23	2½ weeks	Cloud	30	1½ weeks	Trace.
24	4 weeks	Haze	*31	4 weeks	1·25%
25	4 weeks	Trace	*32	4½ weeks	·2%
26	2 weeks	Trace	†33	1 week	Died.
*27	3 weeks	·2%	34	12½ weeks	Cloud.
28	5 weeks	0	*35	6 weeks	·6%.

4. Effects of Pilocarpin and Hot Air Baths.—Twelve of the acute cases were treated at some part of their course with pilocarpin, hot air baths or hot packs, or sometimes with a combination of these methods. In only one case was any

* The patients marked with an asterisk are again those whose after-history has been traced. Those marked † died in hospital.

direct effect traced from such treatment. In this case, a child, admitted with symptoms of acute uræmia, improved rapidly with frequent hot packs. All the fatal cases received treatment of this sort without the production of any noticeable effect.

I have recently watched with some care the results of sweating treatment in the case of a child in the Jaffray Hospital, admitted after the period included in the cases reported in this paper. The patient was a child with extreme œdema and scanty urine containing a large quantity of blood and albumen in the urine. She was treated for a long period with hot air baths, but I have been unable to satisfy myself that they have acted beneficially. Numerous uræmic convulsions occurred during the period of their administration, and the baths appeared to fail entirely either in warding off the attacks or in mitigating their severity. I am not, however, certain that they are altogether harmless, for they have seemed to have a depressing effect on the heart and general condition of the patient. Whilst, therefore, I should be inclined to give a trial to such treatment for a short period in any case of severe nephritis, I do not think that it is worth while to continue it for any length of time in the absence of distinct evidence of beneficial effect. I should, on the other hand, use hot packs in any case of acute uræmia occurring at the beginning of a case of acute nephritis.

5. *Effects of Drugs.*—Numerous drugs have been used in these cases, but it would serve no useful purpose to enter into details with regard to their action. Such action must of necessity be too indefinite to lend itself to analysis of the sort attempted in this paper. I believe, however, that I have seen good evidence of the power of hamamelis to diminish the quantity of blood in the urine. At all events, the quantity has diminished in many cases in a very remarkable manner under its use.

REPORTS OF CASES.

NOTES OF A CASE OF PYOMETRA.

BY C. E. PURSLOW, M.D. (LOND.), M.R.C.P. (LOND.),
HONORARY OBSTETRIC OFFICER, QUEEN'S HOSPITAL;
ASSISTANT TO CHAIRS OF MIDWIFERY AND GYNÆCOLOGY
UNIVERSITY OF BIRMINGHAM;
CONSULTING SURGEON, BIRMINGHAM LYING-IN CHARITY.

THE following is an example of this somewhat rare condition :—

The patient, æt. 63, was sent to me by Dr. Price, of Dudley Port, and gave the following history :—She was the mother of eleven children, the youngest being 23 years old, and the menopause had come on sixteen years ago ; for the past sixteen years she had suffered from prolapse, and there had been protrusion for some years, but she had suffered so little discomfort that she had not consulted a medical man until four months previously, when, as she was experiencing considerable pain, she went to see Dr. Price. He introduced a ring pessary, which kept up the prolapse, but the pain became worse, and she would not wear the ring. On making a further examination, Dr. Price found a tumour in the pelvis, and sent her to see me.

On examining her I found that the cervix protruded readily ; on making a bimanual examination, a tense, rounded, fairly moveable tumour could be felt high up in the posterior part of the pelvis ; the tumour was about the size of a three-months' pregnant uterus, and had all the characteristics of an ovarian cyst, which I at first assumed it to be. On endeavouring, however, to distinguish the uterus from the tumour I found that the much elongated cervix ran up into the tumour, and on passing the sound I found that it passed six inches, and, somewhat to my surprise, entered the tumour ; on withdrawing it some flaky pus escaped. Pyometra was diagnosed.

I advised the frequent passage of the sound, with antiseptic

vaginal douches, thinking that this might cure the condition, as the patient had a much enlarged liver and was not a very good subject for an anæsthetic.

This treatment was carried out for some little time by Dr. Price, but as it did not result in cure, the patient was admitted to the Queen's Hospital. She was placed under anæsthesia and the cervix dilated with Hegar's dilators. About two ounces of fetid smelling pus came away, and the uterine cavity was washed out, then swabbed with carbolic acid and packed with iodoform gauze. The gauze packing was removed next day. The uterine cavity was washed out daily with a double current tube until the 9th day, when the tube could no longer be passed; after this a sound was passed each day until the 15th, when the patient went home.

I have since heard from Dr. Price that the patient remains well, and there has been no sign of return of the uterine distension.

The interesting points about the case are—

First, that the distension affected the fundus only, causing a globular swelling, the cervix retaining the long narrow form usually associated with chronic prolapse.

Second—the diagnosis, the swelling presented all the characters of a small ovarian cyst, and the correct diagnosis was only arrived at after the passage of the sound. I may say here that this is one of the few cases in which I have found the sound a valuable diagnostic instrument; in routine examinations I very seldom use it, preferring to rely on the bimanual examination.

MEDICAL ABSTRACTS.

EPILEPSY.

BY JAMES W. RUSSELL, MA., M.D., M.R.C.P.

TREATMENT.

La dose suffisante de bromure et la signe de la pupille dans le traitement de l'épilepsie. Par le Dr. Gilles de la Tourette.—(La Semaine Médicale, 1900, p. 331.)

M. Gilles de la Tourette claims that a reliable guide to the dose of bromide needed by each individual epileptic patient can be obtained by observing certain pupillary signs, which he proceeds to describe. His paper also contains a discussion of the general treatment of epilepsy, as far as it controls and aids the tolerance of the bromide treatment.

1. The first section of the paper deals with the length of the course of treatment, and the best way of administering the bromides. The writer insists on the steady continuation of treatment for from two to three years, without the omission even of a single dose for any but the most urgent reasons. He advises that some one member of the patient's family should be induced to undertake the rigid supervision of this matter, and absolute regularity can, he thinks, thus be better obtained at home than in institutions. The administration should be continued during menstruation and pregnancy, and may even be given with safety during most of the acute illnesses.

M. de la Tourette's favourite prescription is as follows: potassium bromide, 40; sodium and ammonium bromide and benzoate of sodium, $\bar{a}\bar{a}$ 12; distilled water, 1000. One gramme of bromide is thus contained in 15 c.c. of the solution. The

benzoate of sodium is included on the principle, enunciated by M. Ch. Féré, that bromides are more regularly absorbed in the presence of an antiseptic, which tends to limit intestinal fermentation.

Some discrimination should be shown in the choice of the time of administration. If the fits occur quite irregularly, two doses of equal size should be given night and morning, or if the quantity needed is a big one, it may be taken three times a day. If, however, the fits tend to occur at more or less fixed intervals, two-thirds of the daily quantity should be ordered about two hours before the expected attack, and one-third at some other period. In any case the solution should be diluted immediately before being administered.

2. In the second section the choice of the dose for each individual patient is considered. Such choice ultimately depends upon the age of the patient and his tolerance for bromides. In any case which has been previously treated with bromides, details of former experience should if possible be obtained; otherwise, the doctor must proceed with caution. The quantity of urine passed per diem, and the presence or absence of albumen, should always be ascertained, as kidney affections interfere with the excretion of the drug. Children take bromides better than adults. The severity and number of the attacks have but little effect upon the dose needed to control the disorder.

M. de la Tourette believes that for each patient there is what he calls the "dose suffisante" of bromide. Less than this quantity fails to restrain the fits; more involves some degree of intoxication. The method recommended is to ascertain by successive trials the dose which the patient can tolerate, and then to make use of the method of successive increase and decrease recommended by Charcot. According to this method, starting the first week with what is approximately thought to be the "dose suffisante," the quantity is increased during the next two weeks at the rate of 1 gramme per week. A weekly diminu-

tion at the same rate is then ordered until the original dose is re-attained. This process is then regularly repeated at three-weekly intervals, and by its means M. de la Tourette maintains that during the week of highest dosage a larger quantity of bromide is tolerated than is the case when the dose remains constantly the same, and that a practically constant degree of impregnation with the drug is attained throughout the successive periods. In women the three-weekly periods may often be replaced by similar periods of four weeks, on account of the frequent influence of menstruation on the occurrence of fits. The week of strongest dosage should correspond with the few days preceding the flow, the period of menstruation itself, and the day or two succeeding.

After this method of progressive increase and diminution of dose has been continued for some little time, the physician should be able to judge with accuracy of his patient's tolerance of bromides. The patient himself should during the third week (that namely, of the largest dose) recognise that he is well under the influence of the drug: he should feel more heavy and languid than in the week preceding, less fit for intellectual work, and more ready to sleep.

There is, however, another sign that the patient has reached his limit of tolerance, which M. de la Tourette now describes for the first time. During the first week, when the patient is taking the minimum dose, the pupils are of normal size, and react normally to light and accommodation. As the dose is increased, there comes a time when the pupils become distinctly dilated, and react sluggishly to light and accommodation. This period should correspond with those subjective feelings which have just been described. If the dose be carried still further, the pupils become fully dilated, and their reactions are lost. The aim should therefore be to arrive during the week of maximum dosage at the stage of moderate dilatation and sluggish reactions, with subjective feeling of moderate bromism, and the dose needed to produce these phenomena is the "dose suffi-

sante" of the author. After continued treatment, it may become necessary to increase the dose in order to maintain this limit of toleration.

3. The third section of the paper deals with the symptoms of bromism which are apt to arise in the course of this treatment. These, however, are of the well-known type, and do not call for mention here. The treatment advised is as follows:—If grave symptoms of general intoxication make their appearance, the drug must be stopped, the patient purged freely and put on a milk diet, and the tinctures of squill and digitalis ordered for the purpose of stimulating the heart and kidneys, and thus eliminating the poison. If there is simply a tendency to the appearance of symptoms of bromism, especially those of the skin, one or two warm soap baths a day may enable the patient to continue the treatment without ill effect. The treatment of the skin affections themselves must be carried out on general lines.

4. In the fourth section, the author reviews the general conditions of life under which the epileptic should be placed in order to increase his tolerance of the bromide treatment. He should as far as possible live in the open air, and especially avoid close rooms; walking and other bodily exercises should be insisted on, short of fatigue. Sleeping during the day must not be allowed, as it is well-known that the sleeping state is favourable to the occurrence of epileptic attacks. Again, anything which tends to increase the arterial tension is likely to provoke a fit; and indeed, vascular skin phenomena may be the warning signs of an attack.

5. The food of an epileptic patient should be easily digestible, and meals should be small and frequently repeated. Moral treatment is urged as an essential part of the attempt to produce a cure, and for this reason systematic occupations, and in the case of children moderate schooling, should be enforced.

6. In spite of these precautions, which are all mentioned with the object of aiding the tolerance of large doses of bromide, though they have of course more direct advantages, there remain

certain patients who react strongly to small doses of the drug. Such cases must of course be treated with small and very gradually increasing doses; but in addition, M. de la Tourette recommends the use of cold water douches after breakfast every morning. The patient should then take a short walk. In cases in which bromides given by the mouth cause vomiting or other symptoms of gastric irritation, success will often follow the administration of the drug by enemata. Such a method of administration is also recommended in cases in which an ordinary dose by the mouth fails to control the disorder.

The same section deals with the necessity for guarding against some of the nocturnal accidents which are apt to occur. Further, advice is given to insist upon a period of complete rest, with administration if necessary of cardiac stimulants, after the occurrence of fits of more than usual severity. The same advice holds good, though in a modified degree, for all cases in which an epileptic attack leaves the patient in a condition of much exhaustion.

7. The period at which it is safe to begin to diminish the "dose suffisante" is finally discussed, and the rule is laid down that at least a year must be allowed to pass after the disappearance of all epileptic symptoms. Even then the greatest caution must be observed. It is, however, well to remember that an increase in the dose will probably be advisable even when the phenomena have apparently entirely subsided; otherwise a fresh outbreak may occur. The "pupillary signs" will again be the guide in this matter, and may, according to the author, be with safety depended upon.

Traitement de l'Épilepsie par les Bromures et l'Hypochloruration. Par Ed. Toulouse.—(*Journal de Médecine de Paris*, 29 Avril et 6 Mai, 1900).

De la Demi-inanition Chlorurée dans le traitement de l'Épilepsie. Par M. Roux.—(*La Semaine Médicale*, 1900, p. 100).

In a former Abstract of the treatment of epilepsy (*Birming-*

ham Medical Review, Jan., 1900), the present writer made brief reference to the proposal of MM. Richet and Toulouse to increase the susceptibility of the body to the action of bromides by diminishing the quantity of chloride of sodium taken in the food. In the *Journal de Médecine de Paris* M. Toulouse relates the results obtained in twenty patients submitted to this treatment.

M. Toulouse gives several quotations from Bunge's work on biological and pathological chemistry to show that, whilst young growing animals require a considerable quantity of sodium salts in their food, the amount taken by the ordinary adult far exceeds that which is necessary for health. That this is so is shown by the ease with which large salt eaters submit to a diet (*e.g.*, milk diet) in which chloride of sodium is present in very small quantities. A certain minimum quantity is, however, necessary for the maintenance of life, as has been shown by experiment. MM. Lapicque and Richet have shown that a man 60 kilogrammes in weight ordinarily consumes an average daily quantity of 14 grammes, whilst the daily minimum needed is only 2.4 grammes. The latter quantity is very nearly that contained in an ordinary diet without the addition of salt, and corresponds closely with the amount contained in three litres of milk.

M. Toulouse has constructed the following diet table :—

Milk	1000 grammes
Potatoes	300 "
Two eggs	70 "
Coffee	10 "
Beef	300 "
Flour	200 "
Sugar	50 "
Butter	40 "

This food contains 2.19 grammes of salt, and also the number of heat units required for a woman's diet, for which it was calculated. It was taken without inconvenience by the

patients under M. Toulouse's care, and no bad result followed the sudden diminution in the daily quantity of salt consumed.

The diet was administered to twenty female epileptic patients, varying in age from 17 to 49 years, who had suffered from epilepsy for very varying periods. In all cases the fits were of frequent occurrence before the commencement of the diet. In addition, 4 grammes of sodium bromide were first given daily, the dose in most cases being later reduced to 2 grammes. Three tables are given which are worth careful study, and which throw much light on the effect of the treatment. In one of these the average number of fits occurring during the ten days immediately preceding the change in diet is given, and also the average number in the two subsequent and consecutive periods of fifteen days each. In every case the number of major attacks diminished with the change of diet, though in three there was a slight increase in the number of minor fits. Moreover, the diminution was much more marked in the second period of fifteen days, thirteen out of the twenty cases losing their attacks altogether. Two cases are especially striking: in the first, one attack every five days had been the rule, whereas not a single attack was noted during the 184 days of the treatment; in the second, after suffering from fits every two days, the patient had only one in the 180 days following the change. To sum up the results, the major attacks diminished by 92 per cent., the minor attacks by 70 per cent. The total diminution was 89 per cent. in the second half, 81 per cent. in the first half of the treatment.

These results are somewhat complicated by the fact that nine of the patients had taken the same quantity of bromide before the commencement of the dietetic treatment, whilst the others were put upon the special diet and bromides at the same time. Yet the total diminution in the attacks in the former case was 87 per cent., as against an average diminution of 81 per cent. for the whole series. The tables similarly show that douches with which the treatment was accompanied in certain cases were not responsible for the improvement. Moreover, on

reverting to ordinary diet the fits invariably returned in the course of a few days, whether bromides were given or not. It is not yet possible to say whether prolonged treatment can give rise to a complete cure of the disorder.

With regard to the effect of the diet on the various functions, it is to be noted that the weight increased or remained stationary in thirteen out of the twenty cases. With the exception of three patients who presented considerable loss of weight (for which other causes are suggested), the others all varied within reasonable limits. The treatment seemed to have no recognisable effect on the muscular power, temperature, blood, digestion, menstruation, or urine.

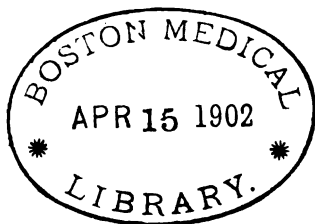
At a meeting of the Société de Biologie, held on March 17th, 1900, M. Roux related his experience of the treatment of four epileptic patients by a milk diet, containing a small quantity only of chloride of sodium. At the same time from 3 to 4 grammes of bromide of sodium per diem were prescribed. All the patients quickly lost their attacks, and M. Roux considers that the effectiveness of the diet was shown by the fact that in one of the patients the addition of chloride of sodium to the milk was sufficient to cause a return of the fits.

Santonin in the Treatment of Epilepsy. By G. Frank Lydston, M. D.—(*Therapeutic Gazette*, February 15th, 1900.)

Dr. Lydston has been using santonin in the treatment of epilepsy for nearly twenty years, and has been well pleased with his results. His attention was first called to the drug by reports of its value in the treatment of the various spasmodic affections of childhood in cases in which there was no proof of the presence of intestinal worms. It therefore occurred to him that the beneficial effect of santonin might be due to some effect on the nervous system altogether apart

from its action as a vermifuge, and his experience in practice has proved to his satisfaction (1) that on the whole epileptic patients show better results with santonin than with bromides; (2) that santonin acts well in cases in which there is intolerance for bromides; and (3) that the drug is free from injurious effects. Especially is the action of santonin free from the depressing mental and circulatory effects of the bromides and from the skin eruptions so frequently produced by them. Such bad effects as santonin produces are not generally severe and are transitory. Dr. Lydston begins with doses of from 2 to 5 grains three times daily, and then gradually increases the quantity up to the point of intolerance.. Many patients have thus taken 20 grain doses three times daily for several weeks without inconvenience, though 15 grains appear to be the usual limit. Symptoms of irritation of the bladder have been the most common toxic effect met with. Occasionally the combination of santonin and bromides has proved necessary, whilst in many cases the alternate administration of the two drugs has acted well.

(To be continued.)



REVIEWS.

BATH WATERS: A RATIONAL ACCOUNT OF
THEIR NATURE AND USE.*

To Dr. King's monograph Mr. Baring-Gould has contributed a brief account of the history of Bath, legendary and otherwise. The author's work also commences with a short account of its past history, and is succeeded by a chapter on the present condition of the town. Three further chapters are devoted to a very short account of the baths and bathing establishments, the therapeutic action of the waters, and the conditions suitable for treatment. The bulk of the work is given up to descriptions of the various forms of chronic rheumatism, gout, and rheumatoid arthritis, and their treatment. The book is supplied with numerous illustrations, some being reproductions of ancient prints, others photographs of the various baths, and the remainder photographs of the joints of patients affected with the complaints which the book describes.

We think that Dr. King might make his book much more useful by devoting the greater part of it to its real subject—namely, the waters of Bath. Comparatively few medical men in the country have any opportunity of gaining personal experience of the treatment of disease by baths; and a book going fully into the action of the waters, their effect on various morbid conditions, and their limitations, and, above all, recording in detail the writer's actual experience in the treatment of his cases, would, we are sure, be appreciated by the profession. But,

* Bath Waters: A Rational Account of their Nature and Use. By Preston King, M.D. Cantab., Hon. Physician Royal Mineral Water Hospital, Hon. Assistant Physician Royal United Hospital, Bath. With an Historical Sketch, by S. Baring-Gould, M.A. Bristol: J. W. Arrowsmith.

unfortunately, the author gives little more than generalities of a very stereotyped description.

We further regret that Dr. King has put so little individuality into the clinical part of his book. He apparently forgets that he possesses special opportunities of seeing in all its forms and stages a disease of which the ordinary practitioner has a much more limited experience; and that a clinical study of his cases and a careful account of the results of his experience would have no small value for the general reader. His scanty and somewhat common-place description of the ordinary features of rheumatism and gout has, we fear, much less value. Here and there the author allows himself the privilege of referring to some of his own cases, but even then he appears to be in too great a hurry to give any details. Take, for example, the report of the case of supposed meningitis on page 58, and that of a case of temporary paraplegia on pages 58 and 59, both of which are quite unconvincing owing to the absence of clinical details. Again, Plate 2 gives a very interesting photograph of the hand of a patient suffering from "chronic rheumatic arthritis," in which, as far as the third and fourth fingers are concerned, the hand corresponds typically to the "*main en griffe*." Dr. King says that this is a good instance of "those cases in which the rheumatic poison affects chiefly the muscles, causing wasting," but gives no further reference to what is certainly a very interesting condition, though its pathology is, perhaps, not so simple as the author declares. Surely, however, he is wrong in attributing this deformity to wasting of the extensors and "the overbalancing effect of the flexors." Unless the photograph misrepresents the condition, it is one which could only arise from paralysis of the interossei and from the "overbalancing effect" of the extensors, not their paralysis.

Some unfortunate mistakes in the letterpress might with advantage be corrected in a further edition. Especially do we doubt whether Dr. Hermann Weber will welcome the entirely new version of his name which occurs twice over in this book.

Our review is not intended to be altogether unfavourable. Those readers who like brief accounts of important subjects will find much in it that will please them. But we are desirous of getting the right book on a very important subject, and we think that Dr. King might write it.

DISEASES OF THE THYROID GLAND.*

THIS book is largely built upon the first and second of the Goulstonian Lectures, delivered by Dr. Murray before the Royal College of Physicians in 1899. It deals with the structure and functions of the thyroid gland, together with the two conditions which result directly from the abolition of its function. A second volume is promised, in which goitre, exophthalmic goitre, and other diseases of the thyroid will be described.

The present volume consists of three chapters. The first is devoted to a careful consideration of the structure of the thyroid, and the part played by it in the economy of the body. Dr. Murray here deals briefly with the large amount of conflicting experimental work which has been done on this subject, and places himself at once on the side of those who hold that the gland supplies an internal secretion, which passes into the general circulation, and plays an essential part in the processes which make for the health of the body. In this we think he is wise, though perhaps a slightly fuller reference to the chemical work which has been done abroad might have been given with advantage.

Dr. Murray gives a most interesting account of his own experimental work, and records the results of the numerous

* Diseases of the Thyroid Gland. Part I., Myxoedema and Cretinism. By George R. Murray, M.A., M.D., Camb., F.R.C.P., Heath Professor of Comparative Pathology in the University of Durham, Physician to the Royal Infirmary, Newcastle. London: H. K. Lewis, 1900.

operations which he has performed. In connection with the Erasmus Wilson Lectures, which have recently been delivered at the Royal College of Surgeons on the same subject, and in which much stress is laid upon the difference in function of the thyroid and parathyroid glands, it is interesting to note that Dr. Murray is in agreement with the later lecturer. Especially does he make a marked distinction between the acute nervous symptoms which he attributes to the removal of the parathyroids, and the changes in metabolism of the tissues and the slowing of the mental processes which are due to absence of the thyroid secretion.

The second chapter is devoted to a full description of the symptoms of myxœdema. Of necessity this section of the book does not contain much that is new; but it is suitable that a complete consideration of the whole condition from every point of view should be placed on record by the physician who is directly responsible for its successful treatment. Moreover, the account is an excellent one, and leaves nothing to be desired. Several photographs, both of patients and of microscopical specimens, are placed in illustration of the context.

What we have said of the chapter on myxœdema is true also of that on cretinism. It contains an excellent, clear, and full account of the condition and of its pathology and treatment, and is again well illustrated. We shall look forward with interest to the second volume of the work, and with confidence that it will form a valuable addition to the literature of the remaining diseases of the thyroid gland.

LECTURES ON NASAL OBSTRUCTION.*

THIS little book is best described in the language of the author as "the substance of three clinical lectures delivered in connection with the Throat Department in St. George's Hospital in the year 1900." It has been published for the use of the busy practitioner who has not time to study the more elaborate works on the subject.

The author issues some useful warnings to those not specially skilled in the diagnosis of the cause of nasal obstruction; some of these we would emphasise, as, for instance, that caution should be exercised in pronouncing an obstruction as due to nasal polypi, "always alarming to the patient," as it not infrequently happens skilled observation finds other causes to be answerable for the symptoms, and no polypi present.

While not agreeing with all the opinions expressed as to adenoid growths in the naso-pharynx and their treatment, we commend this portion of the book to the careful consideration of those for whom the work is intended, as it contains useful hints as to the diagnosis, removal, and after treatment of such cases.

The third and last lecture is on the treatment of nasal polypi, the various methods for removal being shortly described. In conclusion, we think the practitioner and student will obtain much useful information from a perusal of the work.

DISEASES OF THE NOSE AND THROAT.†

THIS is the second edition of a work which first appeared in September, 1899. That the first edition has been so soon exhausted points to the fact that the book has found favour with the section of the medical profession interested in its subjects.

* Lectures on Nasal Obstruction. By A. Marmaduke Sheild, M.B. (Camb.), F.R.C.S. London: Rebman Limited.

† Diseases of the Nose and Throat. By D. Braden Kyle, M.D. London: W. B. Saunders and Co.

The book commences with the usual chapter in such works on the Anatomy and Physiology of the Nose and Throat, followed by descriptions of the various methods of examination and illumination, also a useful chapter on general consideration of mucous membranes. The rest of the work is arranged rather differently from the usual run of text-books, the various diseases being arranged according to the pathological alteration caused by them.

The author is concise and methodical in dealing with the various diseases, their pathology, diagnosis, prognosis and treatment. There are useful chapters on the accessory sinuses of the nose, though we think some of the more recent operations might have been described so as to bring the work up to date. One chapter is devoted to Neoplasms of the whole of the respiratory tract. This arrangement has its advantages as comparisons can be easily made as to the frequency of site in the various forms of tumour.

The rare diseases of the nose and throat are discussed more fully than is usual in text-books. There are numerous comparative tables for the purpose of diagnosis, also tables showing systematic grouping of the diseases of various regions, and the author has spent some time and trouble in writing out numbers of drug formulæ for treatment.

The book is printed in good type, is replete with illustrations, the black-and-white being better, in our opinion, than the coloured ones. In conclusion, we hope the author will have as great success with the second edition as with the first.

OUTLINES OF THE DISEASES OF WOMEN.*

THIS is a precise and well arranged manual for students and junior practitioners, and it begins with an accurate anatomical description of the female genitalia and surrounding structures.

* Outlines of the Diseases of Women. By Dr. John Phillips. Third Edition. Charles Griffin & Co. 1901.

No one can understand any medical subject without having an accurate anatomical view of the part of the body dealt with, and this is particularly the case with gynæcology, because for some reason—perhaps the *post-mortem* changes—very few students gain a competent knowledge of the anatomy of the female genitalia in the dissection room.

There is a very good account of how to take a case, and half the trouble of diagnosis is removed by such a careful expert method. There is no foreign bibliography, and the English authorities are not very recent.

In describing the various views on the changes in the uterus during menstruation there is not enough attention given to the latest views. That is, the reader will be inclined to think there are more gross changes than the modern investigators have described.

The flap-splitting operation for suture of chronic laceration of the perinæum is still put in second place by the author, and it is stated that a comprehensible idea of it cannot be given in writing, and that it must be seen to be understood.

Is not this failure in describing Tait's operation due to two reasons which can be given? The first is that writers seem to take their descriptions second-hand, and do not refer to Tait's original account; and the second reason is that the method of healing of a perineal tear is not generally grasped.

The sections on fibromyomata, ectopic gestation, and bacteriology of the genital tract, are very clear, and are fair *resumés* of present views on these subjects.

Perhaps more mention should have been made of vaginal cœliotomy, which has long passed the experimental stage; and the author would, in our opinion, do well to include descriptions of the anterior and posterior vaginal operations.

Any student who reads this work, and has a good mental grasp of its contents, will have secured a firm basis upon which to build his practical experience.

FRED EDGE.

OBSTETRIC AND GYNECOLOGICAL NURSING.*

THE author has had great experience in lecturing to and training nurses in the Jefferson and Philadelphia Hospitals, and consequently these notes are practical and contain much useful knowledge.

There is a fair preliminary account of pregnancy, and the growth of the ovum and fetus. This might be more precise and succinct, and several casual sentences might be eliminated. It says "the characteristic form of the human being is seen in very early embryos. The limbs are soon developed, the eyes appear as two black dots in the skull, while the embryo moves in the amniotic fluid." This is not of much use to a student of nursing, and may not be quite correctly worded.

However, the description of nursing in labour, lying-in, and for various gynecological operations, is very clear and good. The scope of all books seems to extend year by year, and this book is no exception to the rule. In this way works grow larger and larger, and no doubt more difficult for the person of average education to master. Perhaps this is a fault and may be corrected. The instructions for vaginal douches are very excellently given. The advice to the nurse on her general bearing to the patient seems to us sound and well chosen. The work is beautifully printed in good type.

We can recommend it confidently to all who are interested in nursing, whether gynecological, obstetrical, or surgical.

FRED EDGE.

* *Obstetric and Gynecological Nursing.* By Edward P. Davis, A.M., M.D. London: W. B. Saunders & Co. 1901.

BURDETT'S OFFICIAL NURSING DIRECTORY,

1901.*

AN alteration in the form of the Official Nursing Directory is to be noticed in this, the fourth, edition. Hitherto the Directory has been combined with an account of the principal nursing schools in the United Kingdom, the Colonies, and the United States. The Editorial Committee are now of opinion that this latter part of the work may with advantage be separately published, and this has been done under the title "The Nursing Profession." The Directory, therefore, now consists only of a list of duly-trained nurses, their addresses, the schools in which they have received their training, and the appointments which they hold or have held. Attention is again drawn in the preface to the difficulty of obtaining answers to the circulars sent out asking for the details which should appear in the Directory. We should have thought that the advantages of such a book were so obvious, as also the importance of making it complete, that every nurse would have taken the small amount of trouble needed on her part to ensure the success of the undertaking. Unfortunately this has not been universally the case, though we are glad to see that the returns are steadily increasing in number. We wish the book all success, inasmuch as it is one of material value and convenience.

THE PATHOLOGY AND SURGICAL TREATMENT
OF TUMOURS.†

IN this, the second, edition of Professor Senn's book a section has been added on Sarcoma of the Decidua, the general text has been revised, and many new illustrations have been added.

* Burdett's Official Nursing Directory, 1901. By Sir Henry Burdett, K.C.B. Fourth year. London: The Scientific Press, Limited.

† The Pathology and Surgical Treatment of Tumours. By W. Senn, M.D. Second edition, revised. Philadelphia: W. B. Saunders, 1900.

In reading a book on the Pathology and Treatment of Tumours we cannot help drawing comparisons between it and the standard work on the subject published in this country—namely, that by Dr. Bland Sutton. But the general plan of the two books is very different ; for, while Dr. Senn does not enter so fully into the subject of the comparative pathology of tumours as does Dr. Bland Sutton, he deals more completely than does the latter author with the more purely clinical aspects of the subject. Differential diagnosis, prognosis, treatment, and even the details of operations, are all of them fully entered into, while the descriptions of the microscopical appearances and the discussions on the various theories as to the origin of tumours are in every way admirable. As a guide to pathology and treatment, and as a reference book, containing an enormous amount of information, we can heartily recommend Professor Senn's book to the notice of the surgeon and of the pathologist. The high opinion expressed in the review of the first edition is fully maintained.

GOLDEN RULES OF HYGIENE.*

DR. WALDO has managed to compress many useful hints into the latest of the "Golden Rule" Series. It is not reasonable to expect more than hints in a book of such very small size, but such works need sound knowledge and judgment to compile. We are not convinced of the real value of the series, but undoubtedly Dr. Waldo has succeeded in carrying out its aim with considerable ability.

*Golden Rules of Hygiene. By F. J. Waldo, M.A., M.D. (Cantab), D.P.H., Barrister-at-Law, Medical Officer of Health, Inner and Middle Temples. Bristol : John Wright and Co.

SAUNDERS' YEAR-BOOK OF MEDICINE AND
SURGERY.*

THE volume on Medicine of Dr. Gould's Year-Book reaches its usual high standard of excellence, and is still entitled to rank first amongst similar works. The abstracts of the various papers quoted are necessarily short, but they are so ably condensed that a surprisingly good idea of the original paper is often given in the space of a few lines. The book would well repay a careful and systematic study.

University of Birmingham.



FACULTY OF MEDICINE.

FIRST Examination for the Degree of Bachelor of Medicine
and Bachelor of Surgery, June, 1901

PASS LIST.

ELEMENTARY BIOLOGY (Part) I.)

Crowe, Henry Neville	Hunt, Richd. Stuart Wathen
Evans, Harvey Atkins	Jotham, George Frederick
Williams, Norman Valentine.	

* Saunders' Year-Book of Medicine and Surgery. Under the General Editorial Charge of George M. Gould, M.D. (Medicine). London and Philadelphia : W. B. Saunders and Company. 1901.

CHEMISTRY AND PHYSICS (Part II.)

Class I.

Glissan, Francis Reginald D'Alton	Rollason, Norman John Lancelot.
--------------------------------------	------------------------------------

Class II.

Aitken, Robert Wallace	Hadley, Leonard Leigh
Astbury, Reginald Hudson	Horton, William Claude
Bunting, Edward Lancelot	Houghton, William Cuthbert
Greener, Helen Gertrude	Pickerill, Henry Percy.

SPECIAL Second Examination for the Degree of Bachelor of
Medicine and Bachelor of Surgery, June, 1901.

PASS LIST.

Class I.

Weaver, Alfred Ernest Remmett	Wilkinson, Frederick
----------------------------------	----------------------

Class II.

Aviss, William George	Hird, Robt. Beatson Dennis
Cook, William	Mackey, Leonard George
Gettings, Cuthbert Keay	Joseph
	Wilkinson, Edmund

For the Degrees of Bachelor of Medicine and Bachelor of
Surgery.

(a) *Associates.*

Langley-Brown, Henry William	Lloyd-Owen, David Charles Smith, Priestley
Cureton, Edward	Webb, Thomas Law
Leedham-Green, Charles	Whitcombe, Edmond Banks
Lloyd, Jordan	

(b) Past Students of the Birmingham Medical School.

Belcher, George Clement	Longmore, Tom
Burd, Reginald Shirley	Motteram, Henry Prince
Cant, Arthur	Orford, Herbert John
Charsley, Gilbert William	Orton, John Orton
Emery, Arthur	Page, Edward Ferdinand
Fowler, Thomas Webb	Pepper, Henry William
Godson, John Edward	Pooler, Harry William
Hall, Frederick James	Prosser, Astley Bennett
Vincent	Sisam, William
Harcourt, Charles Harold	Stanley, Arthur John
Hawley, Arthur	Townsend, Arthur Allen
Hill, George Leonard	Deykin
Jackson, Wilfrid Anthony	Wilkes, George Arthur
Legh	

(c) Under Ordinary Regulations.

Quirke, Michael Joseph

For the Degree of Bachelor of Dental Surgery.

(a) Associate.

Whittles, John Dencer

(b) Past Student of the Birmingham Dental School.

Round, Harold

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New Books, etc., Received.

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A Treatise on Plague. By Major GEORGE S. THOMSON, M.P., M.Ch., M.A.O., Roy. Univ. Irel., I.M.S. Bombay; and Dr. JOHN THOMSON, M.R.C.S.I., L.R.C.P.I.

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Golden Rules of Hygiene. By F. J. WALDO, M.A., M.D. (Cantab.), D.P.H., Barrister-at-Law.

From Macmillan and Co. Limited—

Anæsthetics and their Administration. By FREDERICK W. HEWITT, M.A., M.D. Cantab.

From W. B. Saunders and Company, London—

Atlas and Epitome of Labor and Operative Obstetrics. By DR. OSKAR SCHAEFFER. Edited by J. Clifton Edgar, A.M., M.D.

Anatomical Atlas of Obstetrics with Special Reference to Diagnosis and Treatment. By DR. OSKAR SCHAEFFER Edited by J. Clifton Edgar, A.M., M.D.

Atlas of the Nervous System. By DR. CHRISTFRIED JAKOB. With a Preface by Prof. Dr. Ad. v. Strümpell. Edited by Edward D. Fisher, M.D.

A Text-book of the Practice of Medicine. By DR. HERMANN EICHHORST. Edited by Augustus A. Eshner, M.D. Vols. I & II.

From James Maclehose and Sons—

Glasgow Hospital Reports. Edited for the Committee by GEORGE S. MIDDLETON, M.A., M.D., F.F.P.S.G.; HENRY RUTHERFORD, M.A., M.B., C.M., F.F.P.S.G.; and WALTER K. HUNTER, M.D., D.Sc. Vol. III.

From H. K. Lewis—

Purulent Nasal Discharges : Their Diagnosis and Treatment. By HERBERT TILLEY, M.D., B.S. Lond., F.R.C.S. Eng.

From Cassell and Company, Limited—

Surgical Diseases of the Kidney and Ureter. By HENRY MORRIS, M.A., M.B. Lond., F.R.C.S.

From Longmans, Green, and Co.—

A Manual of Surgical Treatment. By WATSON CHEYNE, C.B., M.B., F.R.C.S., F.R.S.; and F. F. BURGHARD, M.D. and M.S. Lond., F.R.C.S. Part V. The Treatment of the Surgical Affections of the Head, Face, Jaws, Lips, Larynx, and Trachea.

From Young J. Pentland—

The *Edinburgh Medical Journal*. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New series. Vol. IX.

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THE
BIRMINGHAM MEDICAL REVIEW.
AUGUST, 1901.

ORIGINAL COMMUNICATIONS.

THE BORDERLAND OF MEDICINE AND SURGERY
IN DISEASES OF THE STOMACH.*

BY O. J. KAUFFMANN, M.D.

It is not easy to formulate the principles which, in diseases of the stomach, should lead the physician to advise the sufferer that surgical aid alone can afford him a reasonable hope of cure; for cases differ so much that each one must be judged upon its merits. But an attempt to formulate the principles is useful, for some rules can certainly be recognised which should guide one in this matter; and, moreover, the results of surgery in an increasingly large group of cases are so encouraging, that one is forced to the conclusion that more cases occurring in medical practice should be submitted to surgical procedure than is commonly recognised. In using the terms surgery, or surgical treatment, etc., I mean exclusively operations in which the abdominal cavity is opened.

One may recognise without difficulty a group of cases in which it is accepted probably by the majority of medical practitioners, that surgical procedure should be adopted without delay. This group comprises:—

1. Cases of perforation of the stomach which fulfil the two following conditions: First, that the general texture of the stomach must *not* be greatly altered, so that surgical repair of

* A Paper read before the Midland Medical Society.

the breach may be practicable; and, second, that the perforation must be sufficiently small or recent to give reasonable hope of recovery; or, in other words, the peritonitis must be of sufficiently small extent and the patient must not be too profoundly affected by shock or toxæmia to preclude at least a possible success from cleaning of the peritoneum and closure of the perforation.

Perforations arising from gastric ulcer or from a foreign body perforating from within the stomach are probably the most promising of this class for surgical intervention; but perforations due to corrosive poisoning and phlegmonous gastritis are unsuitable for operation, since they do not fulfil the conditions just mentioned.

2. Cases of cancerous stricture of the pylorus, in which a tumour can be felt and is freely movable on the structures adjoining it, and in which there is at least no very pronounced cachexia and weakness.

3. Cases diagnosable as non cancerous fibrous stricture of the pylorus, where the cicatricial mass can be felt; and cases which can confidently be diagnosed as fibrous stricture of the cardiac orifice (as determined by the œsophageal sound.)

So far, and no farther, I believe, extends the group of cases which ought without question to be immediately submitted to operation.

If now we turn to the group which is questionable, it will be seen to cover much ground. In this group it is subject for discussion whether surgical procedure should be recommended or not. It may be taken to comprise the following classes of cases;—

1. Cases in which there are probably adhesions of the stomach, or cicatricial contractions of that organ, as results of a former ulcer, but which show no present signs of ulceration, and in which history alone justifies our diagnosis of former ulcer.

2. Recent ulcers without perforation of the stomach, presenting acute symptoms which refuse to yield to ordinary

medicinal and general treatment, and in which the hæmorrhage recurs frequently, and threatens life; or in which, from the repeated retching, there is imminent danger of perforation.

3. Suspected cancer of the pylorus, in which no tumour can be felt, but where the leading symptoms are either (1) atonic dyspepsia, or (2) severe and progressing anæmia.

4. Undoubted cancer of the pylorus, which is, however, not freely moveable, and in which, therefore, the chances of its being capable of complete excision are small, or at least uncertain.

5. Cases of long-continued dyspepsia, with its collateral symptoms, with or without evident dilation of the stomach and general wasting, presenting either absence or presence of hydrochloric acid in the gastric juice, and in which the drugs and treatment commonly given have proved useless to alleviate the suffering.

To consider these cases in the order of enumeration :—

1. Cases in which the dyspeptic symptoms are probably due to gastric adhesions or contractions, produced by an old ulcer, but which present no symptoms of progressing (or acute) ulceration.

Instances are frequent in which such a scar or adhesion has been removed by operation with the result that the symptoms have been permanently relieved or totally removed. Such a satisfactory result is of course much more probable if the adhesion or scar be anterior; for anyone who has observed posterior gastric adhesions must be struck with the improbability that surgical operation will be successful in dealing with them. On the posterior aspect one generally finds the pancreas, or the pancreas and liver, widely tied to the stomach, and not infrequently plainly visible through the thinned coats from the inner surface of this organ, so that to separate the stomach would mean almost a membrane-splitting operation. Moreover, it is difficult to diagnose the exact position of even an active ulcer, and much more so to accurately localize scars and adhesions to neighbouring organs. Any operation, therefore, which is undertaken to relieve cases of this class, must

be largely tentative and exploratory ; consequently it should only be recommended with the caution that it may be unsuccessful, for the condition may turn out to be incapable of relief.

Another point is to be considered in connection with this class of cases—namely, the probability that, given favourable conditions, the stomach will adapt itself to the narrowing, distortion, and fixation which these scars may entail. Provided that the narrowing be sufficiently slowly accomplished, the muscular tissue behind it will probably hypertrophy, and—as in the heart and bladder—compensation for the stenosis is often established. This can frequently be observed in stenosis at or close to the pylorus ; and in all probability it also takes place whenever the constriction is situated in that part of the stomach which partakes in active peristaltic movements during gastric digestion. In order to encourage such compensatory hypertrophy, it is advisable to avoid overloading the stomach with bulky meals, which might tend to produce dilation of the organ. And in all such cases time should be allowed, to see whether adaptation of the stomach to the new conditions does not take place.

2. Ulcers, actively progressing, but not complicated by perforation, have from time to time been subjected to operation, when the hæmorrhage has threatened life and medicinal remedies have failed. But, bearing in mind the difficulty of accurately localising the ulcer, and the frequency with which it is situated on the hinder surface of the stomach, together with the fact that this operation would only be undertaken as a last resource and in cases whose general state is alarming, it is very doubtful whether surgical procedure should ever be advised in these cases. In the rare instances of acute gastric ulcer in which opium, astringents, and rectal feeding fail, surgical assistance will probably be unavailing.

3. Cases in which, without the presence of tumour, cancer of the stomach is suspected owing to the obstinacy of the symptoms, great general wasting, and possibly some cachexia,

coupled with evident gastrectasis and perhaps the absence of hydrochloric acid from the gastric juice, are apt to present two kinds of symptoms. The first is simply the symptom-complex of atonic dyspepsia; whereas the second kind couples with such dyspeptic symptoms the presence of progressive anæmia, showing often enough the blood-changes which characterise pernicious anæmia—even though there have been no hæmatemesis or melæna.

These two classes of suspected cancer stand in different positions as regards the advisability of surgical operation. The second class, showing anæmia, is so much more frequently really due to cancer than is the first, that the operation should be unhesitatingly advised if the patient's general condition be not so bad as to forbid it. The first mentioned class however is more uncertain, for many cases of obstinate gastric catarrh are met with in persons of middle age, accompanied by wasting, which are nevertheless amenable to treatment and which, though at first suspected, are eventually proved not to be cancerous. In doubtful cases of this class operation ought not to be advised until patient and thorough trial has been made of other methods of treatment, and these have proved unavailing.

4. In undoubted pyloric cancer, when the tumour is, however, not freely moveable and the probability that it can be completely excised is doubtful, the patient's general condition should be our guide as to whether surgical operation should be recommended or not. With a fairly satisfactory general state, I should personally incline to recommend an exploration, to be completed by total resection, if totality be found possible; and by a gastro-intestinal anastomosis if complete resection of the growth is impracticable. The establishment of a free way into the intestine will in itself do much to ameliorate the sufferer's condition, even if the growth is of necessity left *in situ*.

5. The clinical group around which there hangs at the present time the greatest amount of doubt as to the advisability of operation, consists of those cases of chronic indigestion which show marked depreciation of the muscular power of the

stomach—*i.e.*, evidence of too long retention of food within its cavity, coupled with enlargement of the organ.

In many of these cases which appear intractable by the ordinary medical and dietetic methods, the suspicion arises that the true cause is a stricture of the pylorus, produced either by a scar in the site of a former ulcer, or by fibrous thickening, the result of a chronic inflammatory process which has gradually spread from the mucous membrane to the submucous tissues. In a certain number of these cases of chronic indigestion with motor insufficiency of the stomach and dilation, it has even been suggested that muscular spasm of the pylorus, occurring abnormally in place of the relaxation of that orifice which ought to take place when the chyme is sufficiently prepared, is the cause of the obstruction. Chemical examination of the gastric contents help one but little in determining the cause in these cases. Generally speaking, a large amount of organic acids is found, very often with a diminution of, or the absence of H.Cl.

Where with such a condition a pyloric thickening can be felt, the necessity for surgical aid, provided that the other conditions be favourable, is plain.

But more frequently the question arises : When we have an intractable case, presenting this symptom-group, unaccompanied by any palpable thickening of the pylorus, are we justified in assuming the probability of a pyloric stenosis, and in recommending that it should be surgically removed, or that at least an exploration should be made? The affirmative to this question is, as I understand it, the position which Doyen, and others who follow him, take up, and justly so, I think, if the case has proved to be really intractable. But very generally it appears to me that in cases of this kind the medical treatment is limited to the exhibition of one or other drugs, coupled with directions as to diet which generally lack detail and precision. In all such cases full instructions regarding feeding are of great help to the patient.

Moreover I am convinced, and I feel sure that many share the opinion, that insufficiency of the gastric contractions,

- which is so marked a feature in these cases, is encouraged by insufficient diaphragmatic action ; that in a great many instances the proper movements of the gastric walls can be successfully encouraged by helping the movements of the diaphragm and by removing anything like pressure upon the abdomen, which prevents the free descent of that muscle. It has struck me that we may be wrong in regarding the commencement of all those gastric dyspepsias, which are not due to pyloric narrowing or to ulcer, as being necessarily situated in the mucosæ of the stomach. If we consider the microscopic anatomy of that organ, the disposition of the muscularis mucosæ is a striking object, and one can hardly escape the suggestion that its contractions have at least something to do with the conveying of the secretion of the gastric glands into the lumen of the organ. We are ignorant of any independent contractions of the muscularis mucosæ, and can only assume for the present that it shares in the general movements of the stomach walls, and that it presumably suffers from atonic dilation, and perhaps undergoes compensatory hypertrophy *pari passu* with the bulk of the muscular coats of the stomach.

If, therefore, it be true that muscular movements of the stomach are greatly promoted by the regular movements of the diaphragm, and that the muscularis mucosæ is an important factor in ejecting or in stimulating the secretion of the gastric and peptic glands, it is easy to see that any condition which interferes with the free action of the diaphragm may lead to a prolonged and chronic dyspepsia of the primarily motor kind. How frequently this cause may operate I need hardly here say. It is for such dyspepsias which clinically bear the features which I have described, that I think that the physician generally, does not do sufficient ; that with the failure of certain drugs to produce more than the merest temporary relief, the patient is allowed, or allows himself to drop into chronic dyspepsia. Exactly how such cases ought to be treated need not be discussed in this paper, so long as it is understood that by appropriate diet, coupled with encouragement of the muscular

action of the stomach, and by occasional relief of its over-distension by lavage, much more can be done than by the steady exhibition of drugs. It is these patients in particular who are much better treated in what I will, for want of a better term, call "sanatoria," than in their own houses, at least, until they learn the proper routine to be followed by them, which can hardly be indicated, without constant medical supervision.

Now, in these chronic cases, which may depend upon a primary gastric catarrh, or which may, as I have pointed out, depend primarily upon impaired gastro-muscular movements and perhaps consequent wasting of the muscular tissues of the stomach, and which after some time give no palpable indication of pyloric stricture, we should, I contend, not ask for surgical intervention till *all* medical methods of relief fail. We do meet with cases in which these methods fail after the most thorough trial, and when they have honestly failed, and only then, I feel, that as our knowledge now stands, we ought to advise, at least, an exploratory operation.

Finally, I may sum up this paper in the following Theses:—

1. The first group of cases calls undoubtedly and immediately for surgical help.
2. For gastric ulcer with severe acute symptoms, even if it be recurrent, and if therefore, the new ulceration is probably in or attached to the scar of an old ulcer, operation is inadvisable.
3. In atonic dyspepsia, if cancer is suspected but cannot be felt, the indication is so uncertain, and the probability of simple atonic dyspepsia is so great, that rigorous diet, lavage, and medication and rest should be tried before advising operation, notwithstanding even the absence of hydrochloric acid and the presence of gastrectasia.
4. Where cancer is suspected though not palpable, and where anæmia is beginning and progressing, exploratory operation is advisable if the general condition permits.
5. Where cancer is considered improbable, and where the symptoms are long-standing dyspepsia, with or without gastrectasis, and with or without wasting, and where, in short,

simple fibrous stricture or pyloric spasm are suspected by Doyen's school, no operation should be attempted until after thorough trial of other remedial measures (always excluding palpable fibrous stricture); and even then it should not be done so long as the patient maintains his weight (which excludes continuous vomiting). Only if the weight falls progressively in spite of treatment should an operation be undertaken.

THE FINAL PHASES OF CERTAIN CHRONIC DISEASES.

BY J. R. CHARLES, M.A., M.D., M.R.C.P.,
CASUALTY ASSISTANT PHYSICIAN TO THE BIRMINGHAM GENERAL
HOSPITAL.

THERE is a considerable amount of truth in the statement that people frequently do not die from the disease from which they suffer, but that their lives are cut short by other complaints. This statement naturally applies especially to those diseases which run a prolonged and chronic course, and which frequently of themselves do not cause a fatal termination for many years. It will be therefore to these diseases to which I shall confine my attention. If it were not for the unfortunate fact that the presence of one or other of these chronic diseases renders a patient much more susceptible to the occurrence of secondary complaints, a very much more hopeful prognosis could be given in many cases than is, under the circumstances, possible.

On looking at these secondary complaints, it seems reasonable to divide them into two main groups:—

On the one hand there are those which are due to secondarily altered structure and function in other organs, as for example, the hypertrophied heart, the thickened arteries and the cerebral hæmorrhages so frequently met with in chronic Bright's Disease, or the effects of pressure on surrounding organs as in aneurysms from arterio-sclerosis.

On the other hand there is another group of vast importance which includes the secondary inflammations and diseases of

microbic origin. It is with this latter group that this paper is mainly concerned, although the other causes of death will not be lost sight of.

One is struck, at the bedside and perhaps even more often in the *post-mortem* room, at the great frequency with which patients, suffering from such chronic diseases as Bright's Disease, arterio-sclerosis, heart disease, cirrhosis of the liver and diabetes are carried off by these secondary infections, yet, when one turns to the literature of medicine for definite information as to the relative proportion of such deaths from superadded disease, one almost invariably finds that this is wanting, even though definite information on this point is of such supreme importance from the point of view of prognosis.

This paper, therefore, consists of an investigation, which has been carried out from a clinical and pathological rather than a bacteriological standpoint, into the relative proportion of deaths occurring from secondary infections in chronic disease compared with deaths from other causes. With this object in view, I have examined the notes and *post-mortem* records of all the patients who have died during the last ten years in the General Hospital, Birmingham, and who have suffered from these chronic and incurable complaints.

During this period there were 488 such cases, comprised as follows :—

Chronic interstitial nephritis	-	-	-	-	156
Chronic mixed nephritis	-	-	-	-	37
Chronic parenchymatous nephritis	-	-	-	-	22
Cirrhosis of the liver	-	-	-	-	45
Cirrhosis with chronic interstitial nephritis	-	-	-	-	17
Heart disease	-	-	-	-	136
Arterio-sclerosis	-	-	-	-	26
Diabetes	-	-	-	-	31
Lymphadenoma	-	-	-	-	9
Leucocythæmia	-	-	-	-	2
Pernicious Anæmia	-	-	-	-	7

488

The following tables have been constructed to show the apparent causes of death in these several diseases. The deaths which were not due to superadded infections are arranged in the first group of each table, while those almost certainly due to microbic invasion are arranged in the second group. By glancing at the figures, the relative proportion of the two can at once be seen.

The various types of chronic kidney disease have been kept separate as much as possible, as I thought it would be interesting to observe if people suffering from parenchymatous nephritis are liable to suffer from different secondary infections from those suffering from interstitial nephritis. Owing to the deficiency of some of the clinical notes from which these observations have been derived, it has been impossible in one or two instances to be certain whether the patient died from uræmia or heart failure ; but even if the relative proportion of cases dying from heart failure is not quite correct compared with the number who died from uræmia, the relation between Group 1 and Group 2 remains unchanged.

Three tables have also been allotted to heart disease. The first deals with the congenital form ; the second with chronic valvular and myocardial disease ; while the last deals with the malignant form of the disease.

Table I. Showing causes of death in 156 cases of Chronic Interstitial Nephritis.

Group 1.

Uræmia	-	-	-	-	-	-	-	21
Cerebral hæmorrhage	-	-	-	-	-	-	-	41
Subdural hæmorrhage	-	-	-	-	-	-	-	1
Cerebral thrombosis	-	-	-	-	-	-	-	4
Cardiac failure-	-	-	-	-	-	-	-	14
Aneurysm with cardiac failure	-	-	-	-	-	-	-	2
Œdema of lungs	-	-	-	-	-	-	-	2
Cardiac failure with much bronchitis	-	-	-	-	-	-	-	7

Supervention of acute nephritis with oedema of lungs - - - - -	2
Supervention of acute nephritis with uræmia	2
	96

Group 2.

Supervention of acute nephritis with uræmia and pericarditis - - - - -	1
Pneumonia - - - - -	28
Broncho-pneumonia - - - - -	3
Pericarditis - - - - -	4
Pericarditis, pleurisy, peritonitis, and pneu- monia - - - - -	1
Pericarditis and pleurisy - - - - -	1
Pleurisy - - - - -	1
Empyema - - - - -	4
Pneumonia and empyema - - - - -	1
Pneumonia and pericarditis - - - - -	1
Pulmonary gangrene - - - - -	1
Phthisis - - - - -	4
General miliary tuberculosis - - - - -	2
	52

Accidental causes including poisons, carci- noma, etc. - - - - -	8
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Table II. Showing causes of death in 37 cases of Chronic Mixed Nephritis.

Group 1.

Uræmia - - - - -	12
Cerebral hæmorrhage - - - - -	3
Cardiac failure - - - - -	5
Diarrhœa - - - - -	1
Œdema of larynx - - - - -	1
	22

Group 2.

Phthisis	-	-	-	-	-	-	-	4
Pneumonia	-	-	-	-	-	-	-	6
Pericarditis with uræmia	-	-	-	-	-	-	-	1
Pericarditis	-	-	-	-	-	-	-	1
Pyæmia	-	-	-	-	-	-	-	1

13

Accidental, fracture of the skull and poison - 2

Table III. Showing causes of death in 22 cases of Chronic Parenchymatous Nephritis.

Group 1.

Uræmia	-	-	-	-	-	-	-	15
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Group 2.

Pneumonia	-	-	-	-	-	-	-	3
Pericarditis	-	-	-	-	-	-	-	2
Peritonitis	-	-	-	-	-	-	-	1
Broncho-pneumonia	-	-	-	-	-	-	-	1

7

Table IV. Showing causes of death in 45 cases of Cirrhosis of the Liver.

Group 1.

Cholæmia	-	-	-	-	-	-	-	5
Hæmatemesis	-	-	-	-	-	-	-	2
*Cardiac failure	-	-	-	-	-	-	-	13
Compression of lungs	-	-	-	-	-	-	-	2

22

Group 2.

Empyema	-	-	-	-	-	-	-	1
Pneumonia	-	-	-	-	-	-	-	7
Broncho-pneumonia	-	-	-	-	-	-	-	3
Pyæmia	-	-	-	-	-	-	-	1

* These cases include 12 in which marked ascites and œdema of the lungs were present and 1 due to fatty myocardial change.

Tubercular peritonitis	-	-	-	-	-	2
Phthisis	-	-	-	-	-	4
General miliary tuberculosis	-	-	-	-	-	2
						20
Accidental	-	-	-	-	-	3

Table V. Showing causes of death in 17 cases of Cirrhosis of the Liver associated with Chronic Interstitial Nephritis.

Group 1.

Uræmia	-	-	-	-	-	3
Cardiac failure	-	-	-	-	-	3
Cerebral hæmorrhage	-	-	-	-	-	1
Hæmatemesis	-	-	-	-	-	2
Compression of Lungs	-	-	-	-	-	1
Œdema of larynx	-	-	-	-	-	1
						11

Group 2.

Pneumonia	-	-	-	-	-	4
Phthisis	-	-	-	-	-	1
Phthisis and pneumonia	-	-	-	-	-	1
						6

Table VI. Showing causes of death in 8 cases of Congenital Heart Disease.

Group 1.

Cardiac failure	-	-	-	-	-	4
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Group 2.

Phthisis	-	-	-	-	-	1
Cerebral abscess	-	-	-	-	-	1
Pneumonia	-	-	-	-	-	1
Infantile diarrhœa	-	-	-	-	-	1
						4

Table VII. Showing causes of death in 109 cases of Chronic Valvular or Myocardiac Disease.

Cardiac failure	-	-	-	-	-	-	79
Sudden syncope	-	-	-	-	-	-	2
Cerebral embolism	-	-	-	-	-	-	3
Cerebral thrombosis	-	-	-	-	-	-	1
Pulmonary embolism	-	-	-	-	-	-	5
Angina	-	-	-	-	-	-	1
Carcinoma	-	-	-	-	-	-	1
							92
Group 2.							
Pneumonia	-	-	-	-	-	-	7
Broncho-pneumonia	-	-	-	-	-	-	6
General miliary tuberculosis	-	-	-	-	-	-	1
Pneumococcic Septicæmia	-	-	-	-	-	-	1
Accidental sepsis	-	-	-	-	-	-	2
							17

Table VIII. Showing causes of death in 19 cases of Malignant Endocarditis.

Group 2.							
Cardiac failure with septic symptoms	-	-	-	-	-	-	11
Pneumonia, empyema, and pericarditis	-	-	-	-	-	-	1
Pneumonia	-	-	-	-	-	-	2
Pulmonary embolism	-	-	-	-	-	-	1
Cerebral embolism	-	-	-	-	-	-	1
Abscess of spleen	-	-	-	-	-	-	1
Septic peritonitis	-	-	-	-	-	-	1
Cerebral hæmorrhage	-	-	-	-	-	-	1
							19

Table IX. Showing causes of death in 26 cases of arterio-sclerosis.

Group 1.							
Cerebral hæmorrhage	-	-	-	-	-	-	9
Cardiac failure	-	-	-	-	-	-	7

Bronchitis	-	-	-	-	-	-	-	1
Angina	-	-	-	-	-	-	-	1
Asphyxia (pressure of aneurysms on trachea)								2
Rupture of aneurysm	-	-	-	-	-	-	-	1
								21

Group 2.

Pneumonia	-	-	-	-	-	-	-	5
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Table X. Showing causes of death in 31 cases of Diabetes.

Group 1.

Coma	-	-	-	-	-	-	-	16
Convulsions	-	-	-	-	-	-	-	2
Cardiac failure	-	-	-	-	-	-	-	1
								19

Group 2.

Phthisis	-	-	-	-	-	-	-	2
Phthisis and empyema	-	-	-	-	-	-	-	1
Phthisis and general miliary tuberculosis	-	-	-	-	-	-	-	1
Phthisis with gangrene of lungs	-	-	-	-	-	-	-	2
Gangrene of extremities	-	-	-	-	-	-	-	4
Gangrene of lungs non-tubercular (P post pneumonic)	-	-	-	-	-	-	-	1
Pneumonia	-	-	-	-	-	-	-	1
								12

Recent pulmonary tubercular lesions were present in 4 of the cases in Group 1.

Table XI. Showing causes of death in 7 cases of Pernicious Anæmia, 9 of Lymphadenoma, and 2 of Leucocythæmia.

PERNICIOUS ANÆMIA.

Cardiac failure, asthenia	-	-	-	-	-	-	-	7
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LYMPHADENOMA.

Group 1.

Cardiac failure, asthenia	-	-	-	-	-	2
Lymphadenomatous infiltration of lung	-					2
Cholæmia from pressure of enlarged portal glands	-	-	-	-	-	1
Post operative	-	-	-	-	-	3
						8

Group 2.

Pneumonia	-	-	-	-	-	1
Broncho-pneumonia	-	-	-	-	-	1
						2

LEUCOCYTHÆMIA.

Group 1.

Asthenia and cardiac failure	-	-	-	-	-	1
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Group 2.

Tubercular peritonitis	-	-	-	-	-	1
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On reviewing these tables it is clearly seen that in the great majority of cases patients suffering from these chronic diseases do not die from what may be called the normal termination of their complaints, that is to say, they do not die from uræmia in Bright's disease, from coma in diabetes, from cardiac failure in heart disease, or from cholæmia in cirrhosis of the liver. This statement does not however apply with equal force to all forms of these diseases. For example, only 14·7 per cent. of the patients who suffered from chronic interstitial nephritis died from uræmia, 68·1 per cent. of those who suffered from the chronic parenchymatous form died with uræmic symptoms. In spite of this high percentage in the case of parenchymatous nephritis, in most chronic diseases there are too many pitfalls laid during the course of the disease, either by induced changes in other organs, or by the diminution of the resisting powers of the individual to microbic attack, to allow even 50 per cent. of patients to reach the normal ending of their complaint. If the

causes of death be divided into the three following headings—

Direct result of the disease itself,

Indirect result from altered structure and function
of the organs,

Result of secondary infections,

the following percentages will be obtained from the series
of cases under review :—

	Direct result of Disease.	Result of indirect changes in other Organs.	Secondary Infections.	Accidental Deaths.
Chronic interstitial } nephritis ... }	14·7	46·2	33·3	5·8
Chronic mixed nephritis	32·4	32·4	35·8	—
Chronic parenchymatous } nephritis ... }	68·1	—	31·8	—
Cirrhosis of liver ...	11·1	37·7	44·4	6·8
Cirrhosis of liver with } chronic interstitial } nephritis ... }	17·6	47	35·2	—
Congenital heart disease	50	—	50	—
Chronic endocarditis or } myocarditis ... }	73·3	11	15·5	—
Arterio-sclerosis ...	38·4	42·3	19·2	—
Diabetes ...	58	3·2	38·7	—
Average percentage...	40·4	24·4	33·7	—

This table shows that in only three of the diseases, chronic parenchymatous nephritis, chronic endocarditis and diabetes, do more than half of the patients die from the direct effects of the disease itself, while of the other diseases only about 27 per cent. die from the direct effects of the disease. Secondary infections on the other hand are seen to play a most important part in the final issue

It will be noticed that in the second column, which represents the percentage of deaths which occurred as the indirect result from altered structure or function of other organs, there is a very marked contrast between those diseases which are associated with fibrosis of organs and those which are much

less associated with this condition. Thus it is noticeable that, whereas with chronic interstitial nephritis, cirrhosis of the liver, cirrhosis associated with chronic interstitial nephritis, and arterio-sclerosis, at least 40 per cent. of the patients died from causes which resulted from the altered structure or function of other organs, a very much smaller percentage of patients who suffered from heart disease or diabetes died from causes under this heading. And if the kidney cases themselves be compared from this point of view, it will be noticed that while chronic interstitial nephritis with cirrhosis of the liver was responsible for 47 per cent. of deaths under this heading, and chronic interstitial nephritis by itself was responsible for 46·2 per cent., the mixed form of chronic nephritis was responsible for a much smaller proportion (32·4 per cent.), while chronic parenchymatous nephritis, with extremely little fibrotic change, did not cause any deaths in this way. Owing to the more complete disorganisation of the parenchyma in the latter form of disease, it is not surprising that uræmia is relatively much more commonly met with than in the interstitial form; but even though this is so, the proportion of deaths due to secondary infections remains remarkably alike in the two forms—viz, 33·3 per cent. in chronic interstitial nephritis, and 31·8 per cent. in chronic parenchymatous nephritis.

It will be noticed in Table I. that out of 156 cases of chronic interstitial nephritis 41, or 26·4 per cent., died from cerebral hæmorrhage. This seemed so great a proportion that I searched the post-mortem records for the last ten years for cases of cerebral hæmorrhage unassociated with chronic interstitial nephritis. Only nine, or 16·6 per cent., of the total number could be found, leaving 83·4 per cent. as secondary to interstitial changes in the kidneys. These figures I find closely correspond with Dr. Tooth's observations, in which 80·9 per cent. of cases of cerebral hæmorrhage were associated with chronic interstitial nephritis, while in 19·8 per cent. no kidney lesion was found.

Returning to the subject of secondary infections, out of the

total number of 488 deaths from these chronic diseases, 158 may be attributed to microbic invasion, this number including, however, 19 cases of malignant endocarditis. Resulting from this microbic invasion the following number of lesions occurred :—

Lobar pneumonia	-	-	-	-	in 52 cases.
Broncho pneumonia	-	-	-	„	14 „
Pericarditis	-	-	-	„	12 „
Pleurisy	-	-	-	-	„ 3 „
Empyema	-	-	-	-	„ 8 „
Pulmonary gangrene	-	-	-	„	4 „
Phthisis	-	-	-	-	„ 21 „
General miliary tuberculosis	-	-	-	„	6 „
Tubercular peritonitis	-	-	-	„	3 „
Pyæmia	-	-	-	-	„ 13 „
Pneumococcic septicæmia	-	-	-	„	1 „
Abscess of spleen	-	-	-	„	1 „
Cerebral abscess	-	-	-	„	1 „

These figures bring out prominently the greater number of cases of pneumococcic invasion compared with tubercular invasion, especially when it is borne in mind that a considerable number of the serous membrane inflammations in these cases probably owed their origin to the pneumococcus, since there was no sign of tubercular origin.

With reference to the age incidence of pneumonia there is very little of interest to remark. In chronic interstitial nephritis it occurs most frequently between the ages of thirty and sixty, *i.e.*, during the period when the greater number of these patients die. In the other diseases there was a greater uniformity in the distribution of the deaths from pneumonia. The greater majority of the serous inflammations occurred before forty and very much more frequently supervened in chronic Bright's disease than in any of the other chronic diseases.

The reaction of the body to secondary infections, especially to pneumococcic invasion, is very frequently extremely feeble

in these chronic diseases. The temperature is generally considerably lower than it would be in a pneumonia occurring in an otherwise healthy person, while the frequency of respiration is not increased as much as might be expected. Hence many of these infections run a latent course and are unexpectedly found in the *post-mortem* room.

As examples of this condition may be quoted a case of double lobar pneumonia which occurred in a man who suffered from chronic mixed nephritis, whose temperature remained normal and whose respiration rate was about 30 per minute, and a man with arterio-sclerosis and dilated heart whose temperature remained sub-normal throughout the four days he was in hospital before death, even though he had an extensive patch of grey hepatization in his right lung. The respiration rate of this man varied, however, between 40 and 54 per minute. In the other cases with grey hepatization in the lungs the respiration rate did not exceed 32 per minute. Associated with this defective reaction is a defective leucocytosis.

Phthisis on the other hand occurred relatively very much more frequently in diabetes than in any of the other diseases. It was the cause of death in 6 out of 31 cases, while in four more who died from coma, recent and extensive pulmonary tuberculosis was found after death. There appears to be some special reason why tubercle attacks the lungs of a diabetic patient, apart from diminished vitality and lowered resistance which are met with in other chronic diseases; perhaps it may be due to the altered condition of the blood, owing to the increase of sugar and other substances, forming a particularly good pabulum for the tubercle bacillus. No case of phthisis occurred in chronic valvular disease of the heart, which shows the rarity of phthisis in this condition.

Taking into consideration the great number of healthy people who have some latent focus of tuberculosis in their bodies, the incidence of tuberculosis as a secondary infection cannot be considered to be very great. For with the diminution in the vitality of the tissues induced by the presence of chronic disease,

one might expect even more frequent out-breaks of pre-existing tuberculosis as well as fresh infection from without.

General miliary tuberculosis was only found in 6 out of the 488 cases, twice complicating chronic interstitial nephritis, twice in cirrhosis of the liver, once in valvular disease, and once in diabetes. These figures do not corroborate the statement of Osler that "It is surprising in how many instances of arterio-sclerosis, of chronic heart disease, of Bright's disease, and more particularly of cirrhosis of the liver, the fatal event is determined by an acute tuberculosis of the peritoneum or pleura." Secondary infections which take the form of general miliary tuberculosis do not appear to be confined to any period of life.

During the last ten years there have been 59 *post-mortem* examinations on patients who have died from acute miliary tuberculosis, in addition to those which have been previously mentioned. Of these, 46 had no evidence of any chronic renal, cardiac, or hepatic disease. Two of them had a very slight increase in the interstitial tissue of the liver. The remaining ten cases were cases of tubercular meningitis, associated with acute tuberculosis of the lungs, and in these again there was no evidence of chronic disease. During this period of ten years, therefore, acute tuberculosis occurred ten times more frequently in the form of a pure tuberculosis than as a secondary infection to the chronic diseases which have been discussed.

Lastly, as a point of interest, may be mentioned the frequency of the cases in which cirrhosis of the liver was associated with chronic interstitial nephritis in this series of cases. In 62 cases of cirrhosis of the liver the kidneys were granular in 17, or 1 in 3.6. This forms a marked contrast to the cases collected by Dr. Dickinson, who found that in 250 cases of granular kidney the liver was cirrhotic in but 37, or 1 in 7, and who says that cirrhosis of the liver and granulation of the kidney have little tendency to occur together.

REPORTS OF CASES.

A CASE SHOWING HOW DURING DEEP ANÆSTHESIA UNDER CHLOROFORM DANGEROUS REFLEX OPERATIVE SHOCK MAY ARISE.

BY W. J. MCCARDIE, B.A., M.B., B.C., CANTAB.,
ANÆSTHETIST TO THE GENERAL AND DENTAL HOSPITALS,
BIRMINGHAM.

A man, æt. 52, big, strong and healthy-looking, was to be operated upon for hæmorrhoids. I began to administer gas and ether, the proper anæsthetic for these cases, to him, but found that the apparatus was out of order, so changed to chloroform given from a wire mask. The patient gave little trouble, and in 5-6 minutes was deeply anæsthetized, placed on the operating table, and Clover's crutch applied. At the moment of commencement of operation the patient's condition was as follows: Pupils of moderate size, cornea and conjunctiva insensitive, colour, breathing, and pulse very good; rubbing the ribs brought forth no reflex movement. The sphincter ani was dilated, and at once crowing breathing occurred, and lasted for a minute or so, meanwhile that a fair amount of air entered and left the lungs, and I had no anxiety. After the stretching ceased the breathing became quieter and the patient a little pale, so I changed to A.C.E., given from Silk's metal hospital inhaler. Still he was well under; pupil moderately contracted, cornea insensitive and breathing good, limbs relaxed. While in this state, and the operation on the hæmorrhoids was just being completed (the whole procedure only took 4-5 minutes), the patient very quickly stopped breathing, but the colour, though pale, was not so bad. I tried to feel the coronary pulse, but could not. So the operation was interrupted, the patient's tongue pulled out, the crutch removed, the trunk pulled up the table, the head of which was lowered while I listened to hear if there was any breathing. After a few seconds it was heard

very faintly at first, and then gradually returned, and concurrently with it the pulse.

The operation being finished, a bandage was applied to the perineum. The patient quickly recovered consciousness, and was apparently none the worse for his dangerous position, and did not even vomit. Had I been able to administer gas and ether to this patient, as I originally proposed to do, all had been well, and, failing the usual apparatus, I ought to have begun the administration with A.C.E., and then continued it with ether from Silk's metal inhaler—*i.e.*, the same one I actually used to give the A.C.E. from. It is well known that ether exerts a greatly stimulating effect upon respiration and circulation as compared with chloroform, and that the etherised patient is much less liable to serious reflex depressant effects upon these functions, and especially the circulatory one, than is the chloroformed patient. There was no question at all of any serious mechanical obstruction to respiration in this case.

The anæsthetic efficacy of the A.C.E. mixture depending on the chloroform factor, I have in the heading of the case spoken of the deep anæsthesia under chloroform although the A.C.E. mixture was at the time of the serious symptoms administered.

The reason I have noted this case is that the shock took place during *deep* anæsthesia. It is often taught, and I believe especially in Scotland, and in connection with chloroform, that surgical shock is less likely to occur during deep anæsthesia, or is even impossible in that condition. Hewitt, in the recent second edition of his admirable book on Anæsthetics, says: "Some of the worst cases of surgical shock that I have seen have been in patients deeply anæsthetized, and I believe that the reason why the occurrence of this condition in deep anæsthesia has not been more frequently noticed is that the symptoms have often been erroneously attributed to other causes." With his experience I fully agree.

MEDICAL ABSTRACTS.

EPILEPSY.

BY JAMES W. RUSSELL, MA., M.D., M.R.C.P.

(Continued from page 49, Vol. I.)

UNCINATE GROUP OF FITS.

Neurological Fragments. By J. Hughlings Jackson, M.D., F.R.C.P., F.R.S. (*Lancet*, Jan. 14th, 1899).

Epileptic Attacks with a Warning of a crude Sensation of Smell and Taste with the Intellectual Aura (Dreamy State) in a Patient who had Symptoms pointing to gross Organic Disease of the Right Temporo-Sphenoidal Lobe By J. Hughlings Jackson, M.D., F.R.C.P., F.R.S., and Purves Stewart, M.A., M.D., M.R.C.P. (*Brain*, 1899).

Epileptic Attacks preceded by subjective Auditory and Taste Sensations, probably due to a Tumour of the Left Temporo-Sphenoidal Lobe. By J. Michell Clarke, M.A., M.D. (Cantab), F.R.C.P. (Lond.) (*Lancet*, April 21st, 1900).

A Case of Epilepsy with Attacks of Double Consciousness and Hysteroid Seizures. By Philip Meirowitz, M.D. (*The Post-Graduate*, August, 1900).

In a note published in the *Lancet*, January 14th, 1899, Dr. Hughlings Jackson called attention to certain fits preceded by a crude sensation of smell or taste, often accompanied by movements of chewing, smacking of the lips, spitting, etc., and associated with an intellectual aura which he described as the "dreamy state." For these fits, he suggested the term "uncinate group of fits," believing that the symptoms were due to discharge lesions, not confined to the uncinat gyrus, but in a region of which this gyrus formed a part. In *Brain* (Winter, 1899), in conjunction with Dr. Purves Stewart, he records a case representing many of these conditions, and amplifies his views on the subject.

The patient was a medical man, aged 51. There was no history of syphilis, head injury, or otorrhœa, but he had suffered from two severe attacks of septicæmia during the previous $3\frac{1}{2}$ years. Since the second of these attacks (Oct., 1898) he had been liable to occasional attacks of causeless excitement, his manner had become changed, and his memory impaired. Eight weeks before coming under observation he complained of attacks of nausea and giddiness, with frontal headache. These were accompanied by a strong sensation of smell "like camphor or ether," and were succeeded by a dreamy state, in which he "felt as if he were saying, doing, and looking at things which he had experienced before"; surrounding people seemed to have strange expressions, and "people and things seemed to be far away." The average duration of the attacks was one minute. Those who saw him in them stated that his face became pale, and that his expression was that of one "facing an expected horror," though he was not apparently conscious. There was no vomiting. After four weeks of these attacks the smell ceased, but he had numerous fits of nausea and vertigo, in which he felt giddy and experienced a sensation of fear and of impending death. He also occasionally lost consciousness and fell backwards. The headache had become almost constant, and was both frontal and occipital; but a week before coming under observation this had diminished, and he was becoming rather drowsy. Some dragging of the left foot had been noticed.

On examination, on September 11th, 1899, smell and taste were found to be normal, but the hearing was more acute in the right than in the left ear. The right disc showed optic neuritis, but on the left side the disc was only reddened. The visual fields were normal. There was slight facial paresis, mostly affecting the lower part of the face, and, as before mentioned, there was dragging of the left foot. An occasional extensor plantar reflex was obtained on the left side. The patient died on September 13th. A tumour of the right temporo-sphenoidal lobe was diagnosed, but no post-mortem examination was obtained.

Dr. Hughlings Jackson refers to a similar case published in *Brain*, July, 1888, and also to his former note on the subject. Although there were no chewing movements, etc., in this case, he dwells on their frequent association in certain epileptic paroxysms with sensations of taste and smell, and notes also the not uncommon concurrence of "epigastric sensations." The dreamy state belonging to the same group of phenomena varies in different cases. In that recorded above it partook of the nature of "reminiscence," to which healthy people are sometimes liable. Dr. Jackson believes that in these conditions there is a kind of double consciousness—a "mental diplopia." Probably there is some actual defect of consciousness in every paroxysm with the dreamy state; certainly there is in some of them. He describes the psychical condition as consisting of a defect of consciousness negatively, and positively of (1) "the quasi-parasitical state of consciousness (dreamy state)," and (2) remains of normal consciousness. In the above case there was also some emotional disturbance (sense of fear and impending death). Dr. Jackson has elsewhere remarked that epigastric sensations are often accompanied by fear, but he now points out that the emotion may be of any kind, even that of pleasure. He notes the frequent association of gastric and intestinal sensations in health with psychical conditions, and quotes the phrase "bowels of mercy" as illustrating the general acknowledgment of this association. Dr. Jackson finally quotes one of his previously recorded cases in which chewing movements were present in the attacks together with the dreamy state, and in which a small focus of softening was found after death in the left uncinate gyrus.

In the *Lancet*, April 21st, 1900, Dr. Michell Clarke records a case which he classifies as belonging to the "uncinate group of fits." The patient, a woman aged 40, after suffering for 2½ years from symptoms suggesting a cerebral tumour, noticed that she occasionally heard a sound like a band playing at a distance. The tune was always the same and seemed familiar, but she

could never recall it. Directly the sound went away she became aware of an unpleasant taste and at the same time felt confused: her own and other voices sounded unnatural, though she could understand without difficulty. These symptoms always occurred in the same order. Hearing, taste and smell appeared normal on examination, except that with Galton's whistle the hearing of the right ear was found to be slightly keener than that of the left. On one occasion whilst in hospital, the patient in the next bed suddenly heard her "talking and spluttering" to herself. The saliva was running from her mouth and she looked strange; the teeth were clenched and she was talking in a laboured manner. The head was hanging down and shaking, but there were no movements of the limbs. She was heard to say, "Same kind of tune as I always hear, only it is gone." The attack lasted some minutes. A few days later she complained of a peculiar metallic taste, and slight deafness was noted in the right ear. On another occasion, Dr. Michell Clarke himself witnessed one of the attacks. The patient looked confused, the face turned pale and there were smacking movements of the lips and tongue with movements of the tongue as in licking the lips. The angle of the mouth was drawn to the right. A few seconds later the face flushed, the patient gave a short cough, and there was a copious flow of saliva. There was apparently no loss of consciousness. For five minutes afterwards the patient was unable to speak, and then speech was indistinct and slurred and wrong words were used. She died some months later, but no *post-mortem* examination could be obtained.

In Dr. Meirowitz' case, the same phenomena were noted in attacks of genuine epilepsy uncomplicated by the presence of a tumour. The first attack came on with a sensation of "weakness" in the lower part of the sternum. The sensation "worked up" to the head, and the patient was compelled to lean against a lamp-post for support. Then a darkness came over his eyes, and the attack was over. Gradually these

seizures became more frequent, until they occurred several times a day. In the midst of a conversation he would suddenly stare before him, consciousness would become obscured, and he would smack his lips, make chewing movements and ineffectual attempts to swallow. There was no twitching, nor did the patient ever fall. Of late, the attacks had been ushered in by a feeling of fatigue, accompanied by yawning and stretching of the arms. Then followed the sensation of pressure in the lower sternal region passing up to the head, the eyes being wide open and the hands tightly clenched. After the attacks there was great confusion of mind, and the patient asked many questions, such as—"What day of the month is it?" "Where am I?" &c. He remembered nothing of what had happened.

On several occasions, though apparently unconscious, he was able to do things "with a consciousness other than his normal one." Dr. Meiowitz remarks: "It seemed that there was a double consciousness in play, one of which, the ordinary consciousness, was held in abeyance, while the extraordinary condition of mind temporarily dominated the field of mental being, in which state of secondary consciousness memory was abolished or impaired to such an extent that it was impossible for him to recall what had transpired in this unusual condition." Several illustrations of acts performed in this mental condition are given.

MENTAL SYMPTOMS.

De quelques phénomènes d'excitation et de dépression mentales en relation avec l'attaque d'épilepsie. Par le Dr. Maurice de Fleury (*Le Progrès Médical*, 10 Mars, 1900).

Epileptic Ambulatory Automatism. By D. J. McCarthy, M.D. (*Journal of Nervous and Mental Disease*, March, 1900).

Epilepsy associated with Insanity. By Ernest W. White, M.B. Lond., M.R.C.P. (*Journal of Mental Science*, Jan., 1900).

On Epileptic Speech. By A. Campbell Clark, M.D. (*Journal of Mental Science*, April, 1900.)

A Case of Hysterical Aphonia in a Grand Mal Epileptic,

By L. Pierce Clark, M.D. (*Journal of Nervous and Mental Disease*, Oct., 1900).

Dr. Fleury records three cases of epilepsy in which the mental condition of the patients was more than usually affected by the occurrence of major fits. One of these, of which he makes a special study, is worth recording in some detail.

The patient was a barrister, aged 41. When first seen his aspect was that of a degenerate, gravely absorbed in childish things, talkative and self-sufficient. A few days later (Oct. 27th), this condition became more pronounced: he was arrogant and on slight provocation became insolent and aggressive. He spoke with great freedom of his amours in the presence of his mother, who assured Dr. Fleury that these were always warning symptoms of the approach of an epileptic fit. This had already been suspected by the author from the fact that the blood-pressure had risen steadily during the past five days from 13 c. to 16 c. of mercury. On the morning of October 28th the patient had a major fit of moderate intensity, and Dr. Fleury was at once summoned. On his arrival he found him in bed in a condition of great physical weakness and mental depression. The latter, however, in no way arose from distress at the occurrence of another attack, but was due to an exaggerated remorse for his sins, both actual and imaginary, and was accompanied by religious fears and emotion of the most extreme description. Yet, the night before he had not ceased to scoff at his mother on account of her interest in religious matters. The blood-pressure now registered only 11 c. of mercury. On October 29th the tension amounted to $12\frac{1}{2}$ c.: the grasp of the right hand, as measured by the dynamometer, was 30 kilog., that of the left hand 22 kilog. The patient was still depressed and haunted by remorse. From this time the respective measurements steadily increased, and the patient not only gradually recovered from his depression, but returned at length to the insolent and aggressive bearing of the former period. Thus, on November 6th, the blood-pressure was 20 c., the grasp

of the hands 40 and 36 kilog. The mental condition was one of extreme excitement and he was again constantly railing at religion and its professors. Next day another fit occurred preceded by the same intense mental depression, with remorse and religious fears.

The above record is typical of the series of events which succeeded one another at regular intervals. In each case the arterial tension and the muscular force could be taken as guides to the mental condition of the patient, and their increase to the approach of another epileptic attack.

Dr. McCarthy opens his paper by recording the case of a boy, aged 16, who came to the hospital complaining of "spells of unconsciousness." When 2 and 3 years of age, the patient was said to have had two attacks of "inward spasms," lasting half an hour and several hours respectively. He was then noticed to have occasional attacks of vacancy, staring steadily before him and refusing to answer questions. When 10 years of age, he had several "fainting fits," and a year before coming under observation, he began to suffer from the symptoms for which he now sought advice. He complained that at times "people would appear strange to him; should he be talking to anyone, anything they might say appeared peculiar, and in a short time he would lose consciousness and walk rapidly away, or carefully scan the wall or the floor." Consciousness would return in about two to five minutes. In one of the attacks the head was turned to the left, the eyes being turned upwards and outwards. If questioned during the periods of unconsciousness, he would reply and give reasons for whatever he might be doing. No other epileptic phenomena were noted.

Dr. McCarthy proceeds to discuss the various forms of ambulatory automatism, and defines the condition as one in which an individual "consciously or unconsciously performs more or less complex ambulatory acts over which he has no control." Such conditions occur, according to the author, rather frequently in hysteria, less frequently in epilepsy, occasionally

in neurasthenia, and rarely in alcoholism, degeneracy, etc. The hysterical form is generally of long duration, lasting hours, days or even weeks. It may alternate with or be immediately followed by an hysterical convulsion. The patient may further remember what has occurred during the attack, or, if not, the whole series of events may be reproduced by hypnotisation. The neurasthenic type differs from that of hysteria by the fact that the patient is conscious of what he is doing, but is unable to resist the morbid impulse to wander from place to place. In epileptic ambulatory automatism, the attacks are usually short, there is a history of epileptic phenomena occurring at some period of the case, and there are no hysterical manifestations. Unconsciousness is always complete, at any rate as far as may be judged by the absence of any recollection of what has occurred. It would, however, be more correct to say that there remains the capacity to carry on simple intellectual processes and to act on them during a pathological condition of the consciousness.

After commenting upon the types of insanity met with in epileptics at different ages, Dr. White mentions a few points demonstrated by the epileptic records of the City of London Asylum for the past two years.

Although it is generally thought in asylums that the chronic insane are more troublesome, noisy, and destructive at the time of the full moon, the records of the City of London Asylum show that it is just after the full moon that fits are most prevalent in the epileptic insane of the female, but not of the male sex. All female epileptics are more troublesome at the menstrual periods, though as a rule menstruation has no direct effect on the fits. Attacks are more common in winter and spring time, the number being largest in January, February, December, and April in order; and smallest in June, July, and August. The suggestion is made that the explanation lies in the greater amount of exercise taken in the summer, with the resulting free action of the skin. Fits in males are $2\frac{1}{2}$ times more numerous

by night than by day, whereas in females they are twice as numerous by day as by night. This again may be accounted for by the fact that the men are largely employed in manual exercise by day, and that the use of the muscles and the free action of the skin reduce the tendency to fits. Dr. White thinks that the occurrence of nocturnal fits may be due to insane dreams, coupled with an abnormally hyperæmic condition of the brain. He is confident that the more indolent the patient the greater is the tendency to fits by day or night.

In the matter of treatment, Dr. White records his belief in the usefulness of ergot, both in the status epilepticus and in cases of epilepsy which are intractable to bromide treatment.

Dr. Clark's paper gives some interesting details of the condition of speech in fifteen insane epileptic patients. The examinations were made in the intervals between the fits, at a time when there was no mental obscuration immediately dependent on the fits. He sums up his conclusions as follows :—

Although there is much resemblance between the various cases, the range of speech defect in epileptic insanity is considerable. In general it may be said (1) that before and after the fits amnesia and dysphasia are marked ; (2) that when there is emotional excitement these conditions are altered according to the degree of the excitement ; and (3) that when the ordinary mental condition is resumed the patient suffers from reaction, which reduces the energy of the motor and memorial centres.

Although at first patients generally deny any defect of speech, they usually admit it when convicted by their own stumblings. The facial expression is sufficient to demonstrate that they are anxious and disturbed whilst their speech is being tested, and there is manifest effort. Moreover, the answers to questions are carefully given, and often an apology is offered, or there is unnecessary qualification of the reply. Tremors are often worse, and there is more break in the voice when consciousness of a difficulty makes the patient emotional. Again, the

speech of epileptics is more prone to be affected by emotion than is that of normal individuals.

The amount of amnesia varies with the particular emotional state, happiness, anger, rage, etc., and on its degree. Dr. Campbell Clark is of opinion that the range of vocabulary is more or less limited with most epileptics. and that this is probably due to failure of memory (loss of retention) apart from failure of reproduction (recollection).

Extreme aphemia ("inability to speak depending on affection of the co-ordinating centre for the muscles producing articulate sound") is rarely observed, and then only for a time, usually before and after fits. Dysphasia best describes the defective articulate speech of the epileptic, and is due to a reduction of energy in the vocal and respiratory mechanism and a want of co-ordination of the processes. Hence there is feeble, stuttering or staccato speech, and weak or spasmodic articulatory movements. There are also sensations of a "catch in the voice," and loss or reduction of phonation as seen in the growing weakness of the voice towards the end of a sentence. Defective innervation is also shown by tremors of the facial muscles and voice.

Bradylalia and echolalia are other defects occasionally noticed. No agraphia was found in any of the cases, but the writing was marked by considerable tremor.

Dr. Pierce Clark records the case of a German, aged 31, with a bad family history, who had suffered from epilepsy for the last six years. The fits had been both major and minor in type, and had occurred about every three weeks since their first onset. Shortly after coming under observation the patient had a severe fit followed by "loss of speech:" he was able to whisper a few words, but there was complete aphonia lasting for six days. It was thought that the condition might be due to exhaustion of the speech centres, but this theory was upset by the fact that aphonia occurred on several occasions after attacks of petit mal, and finally independently of any epileptic

manifestation. It was then found that suggestion was able to re-establish full power of speech in a few minutes, and again to induce aphonia. This re-establishment of speech was produced after both varieties of epileptic fit. Dr. Clark remarks that the aphonia only occurred "at certain hysterical nodes which the convulsions seem, in the majority of instances, to determine and accentuate."

BIOLOGY.

Condition Biologique des Familles des Épileptiques. Par le Dr. Gaston Béchét.

A Statistical Inquiry into the Prevalence of Epilepsy and its Relation to other Diseases. By James W. Russell, M.A., M.D., M.R.C.P. (*Brain*, 1899).

Vie sexuelle, mariage et descendance d'un épileptique. Par Bourneville et Poulard. (*Le Progrès Médical*, 22 et 29 Sept., 1900).

Dr. Béchét has investigated with great minuteness the family histories of 40 epileptics. The following are some of his results :—

A.—*Longevity.*—Of the 160 grandparents, 25 could not be traced and 5 were still living. The mean age at time of death of the 130 who had died was 69 (males, 68 ; females, 70).

Thirty-seven parents were still alive ; one was untraced. Of the 42 who had died, the average age at the time of death was 55 for the males, 45 for the females, making a mean average of 50.

In normal families, MM. Ball and Régis found that the mean age at time of death was $65\frac{1}{2}$ for grandparents, 57 for parents. It would therefore seem that the parents of epileptics tend to die at a younger age than those of normal individuals, but that this does not apply to the grandparents.

B.—*Number of Descendants.*—The number of the sons and daughters of the grandparents amounted to 305. The number of sons and daughters of the parents (patients' own generation)

			Grand-parents	Paternal uncles and aunts	Mothers	Maternal uncles and aunts	Fathers	Brothers and sisters	Children	Total
Heart affections	...	...	1	2	—	1	1	—	—	5
Aneurism	...	...	1	1	1	2	—	—	—	5
"Dropsy"	...	...	1	3	1	5	1	—	—	11
										21
Phthisis...	...	...	18	4	3	17	8	13	—	53
Pulmonary affections	...	...	35	12	7	16	2	4	—	76
Angina, croup, asthma...			3	—	—	4	—	—	—	7
										136
Affections of bladder	...	...	—	—	1	—	—	—	—	1
Albuminuria, retention of urine	...	...	2	—	1	—	—	1	—	4
Different intestinal affec- tions	...	...	2	6	—	10	—	—	—	18
										23
Alcoholism	...	...	2	1	—	—	—	—	—	3
Syphilis	...	...	—	1	—	—	—	—	—	1
Cancer	...	...	3	1	—	2	2	1	—	9
										13
Specific Fevers...	...	...	1	—	3	—	—	9	2	15

Many interesting points are to be noted in this table, but we can only specially refer to the remarkable susceptibility of the ancestors to pulmonary affections. This result falls in with the outcome of a statistical inquiry made by the present writer as to the occurrence of phthisis in the family history of epileptics as compared with its incidence in the family history of hospital out-patients suffering from other complaints. According to this inquiry, the average percentage of non-epileptic patients who had a family history of phthisis was 17·4, whilst phthisis existed

in the history of 31·6 of the epileptic patients. A reverse connection between phthisis and chronic pneumonia on the one hand and epilepsy on the other, was also noted in the same inquiry, in this case, however, in connection with the personal history of the patients themselves. It was found that one per cent. of all patients attending hospital for complaints with which epilepsy had no connection, had suffered from epileptic convulsions at some period or other of their life. Those patients, however, who came with phthisis or chronic pneumonia, had suffered from such affections in much larger proportion (4·3 per cent.)

Drs. Bourneville and Poulard give in great detail the life history of a male epileptic. The following record of his seven children may be quoted :—

1. Female. Born at the eighth month. Died of marasmus, aged six weeks. No convulsions.
2. Male. Died of measles in his eighth year. No convulsions.
3. Male. History recorded up to his twelfth year. Is very nervous, subject to violent outbursts of passion, and has had several slight convulsive attacks limited to the eyes, as well as fits of sleep-walking.
4. Female. Had several attacks of convulsions, and suffered from hallucinations. She died of diphtheria in her third year.
5. Female. Has had no convulsions, but suffers from night-terrors. When last seen was seven years old.
6. Female. Died in infancy of choleraic diarrhoea.
7. Female. Died of marasmus when twelve months of age.

ETIOLOGY AND PATHOLOGY.

Experimental Research showing that Uric Acid Secretion is not regularly diminished in the Period preceding Epileptic Seizures. By James J. Putnam, M.D., and Franz Pfaff, M.D. (*American Journal of the Medical Sciences*, August, 1900).

Sténose Cancéreuse du Pylore: Crises Épileptiformes, résultant vraisemblablement de Fermentation Anormales dans

l'Estomac Dilaté. Par MM. le Prof. Combemale et C. Huriez (*Echo Medical du Nord*, 5 Août, 1900).

Note sur un Cas d'Épilepsie essentielle consécutive à la Trépanation. Par André Antheaume (*Journal de Médecine de Paris*, 16 Sept., 1900).

Toxicité de la Sueur des Epileptiques et des Paralytiques Généraux (*La Semaine Médicale*, 1900, p. 443).

Dr. Putnam begins by expressing some doubt as to whether the toxic theory of the causation of epilepsy rests upon very secure ground. The research recorded in the paper was undertaken by Dr. Pfaff at his request, and was suggested by the record of a series of experiments made by Kräinsky, a Russian physician and chemist, the conclusions from which were based upon the assertion that the excretion of uric acid is invariably diminished before each outbreak of idiopathic epilepsy. This diminution is said sometimes to precede the attack immediately and sometimes to be separated from it by an interval amounting to a day or two of normal excretion; it is followed by a rise above normal immediately after the attack, so that the total excretion for the period equals the normal quantity. Dr. Kräinsky believes that the essential poison is a derived one, namely carbaminic acid.*

In the experiments recorded in Drs. Putnam and Pfaff's paper, great care was taken to ensure accuracy by control analyses. The method of analysis used was that known by the names of Ludwig and Salkowski. In all, 29 specimens of the 24 hours' urine of two patients were examined. The first had five attacks during the three months covered by the research, and the second had two attacks in the month of October and one in April. The results did not support the supposed diminished pre-paroxysmal excretion of uric acid, nor the rise after the fits; indeed, there appeared to be no relation

* Kräinsky's researches were published in the *Zeitschrift für Psychiatrie*, 1898.

whatever between the two factors. The only point that Dr. Putnam is able to note is that the uric acid excretion of both patients was below the normal.

The case is reported of a man, aged 68, who was admitted into hospital for vomiting, loss of flesh and weakness, of three or four months' duration. On admission he was found to have a dilated stomach and a somewhat enlarged liver. The urine when floated upon nitric acid gave a lilac colour at the surface of contact, which was thought to be due to the presence of indican. The day after admission the vomiting, which had hitherto been profuse, had greatly diminished; but during examination patient had a slight fit, characterised by tremor of the lips and eyeballs, slight tremor of the right arm, and fleeting loss of consciousness. These phenomena were repeated a few days later, again during examination, and the following day a typical epileptic fit occurred. A test-breakfast was then given, but the attempt to introduce the tube caused the ejection of an offensive fluid, which contained no free and very little combined hydrochloric acid, but large quantities of organic acids. One more fit only occurred before the death of the patient, three or four weeks after admission. Post-mortem, the stomach was found to be dilated owing to obstruction of the pylorus by a cancerous mass.

The authors call attention to the fact that definite fits only made their appearance after the diminution of the vomiting which followed admission into hospital, and that on two occasions the emptying of the stomach contents was followed by cessation of the attacks for several days. They therefore believe that the fits were due, not to intoxication from the alimentary canal in the ordinary sense of the term, but to absorption of the products of abnormal fermentation. They conclude with various references to the literature of the subject.

M. Antheaume refers to a case of epilepsy "caused by trephining," published by M. Marchand in the *Révue de Psychiatrie*,

12 Dec., 1899, and records another of the same nature which he saw in the Asile Sainte-Anne, under the care of Professor Joffroy. The patient was a boy aged 16, with a neurotic family history, and of feeble intellect. He had never learnt to speak, had acquired only the most rudimentary education, and was of an irritable and passionate nature. At the age of 15 months he had fallen downstairs and bruised his head, and when three years of age had had another slight fall. Although there was no evidence that these injuries were in any way responsible for his condition, a surgeon advised operation in the hope that some physical cause might be found for his malady. The boy was accordingly trephined, but without result. Three months later he began to be subject to epileptic fits, and remained so in spite of treatment so long as he remained under observation.

The author is of opinion that the nervous shock involved in the operation was probably the cause of the epilepsy, aided of course by the predisposition of an irritable nervous system.

A somewhat similar case is quoted in the *Journal of Mental Science*, April, 1900. It was published by Dr. L. Marchand in the *Revue de Psychiatrie* for Sep. 1899. The patient was a woman, aged 43, who was admitted into the Villejuif Asylum for epilepsy with melancholia. At the age of 22 both ovaries had been removed for cystic disease, previous to which her nervous health had been good. Soon afterwards she began to suffer from flushing and heats in the face, and two months after the operation she had her first epileptic fit. From that time she became permanently epileptic.

At the meeting of the Société de Biologie, held on Dec. 22nd, 1900, MM. Mairet and Ardin-Delteil recorded the results of certain experiments performed for the purpose of ascertaining the toxicity of the sweat of epileptics and general paralytics. The sweat obtained from epileptic patients in the intervals between the attacks was found to be non-toxic and to produce the same physiological effects as that of healthy individuals. Injections

of sweat collected during or immediately after a fit, however, invariably caused the death of the animal experimented on, and that by means of a true toxæmia. Ten out of sixteen animals injected with the sweat of patients suffering from general paralysis died after a longer or shorter period. Five of these showed some degree of paralysis a few days after the injection. In these cases, beside general congestion of the meninges and brain, hæmorrhages and blood-stained effusions were found after death.

Les Accidents de l'Attaque d'Epilepsie liés à la Contraction Musculaire : Contribution à la pathogénie des Hernies vraies du Muscle Jambier Antérieur. Par Ch. Féré (*Revue de Chirurgie*, Jan. 1900).

M. Féré records the following case: The patient was a man aged 45 who had been subject to epileptic fits for the last 13 years. During residence in hospital he complained one morning, after a severe nocturnal fit, of an injury to his right leg, though the attendant was confident that he had neither fallen out of bed, nor received a blow. On examination he was found to be lying on his left side with the left leg extended. The right thigh was flexed on the abdomen, the leg on the thigh and the foot extended on the leg, whilst the toes were strongly retracted. At the junction of the middle with the lower third of the leg, about three centimetres outside the crest of the tibia, there was a tumour the size and shape of a large almond, with its long axis vertical. A feeling almost of fluctuation could be made out in the transverse, but not in the longitudinal direction. Attempts at reduction were painful, and there was pain on voluntary movement. The tumour was diminished in size as soon as the patient lay on his back with the foot bent towards the sole. On standing up with the heels together, the tumour was a little smaller in size than in the first position, and it was harder and more difficult and more painful to reduce. When the patient was placed again in the dorsal position, with the leg straightened and the foot abducted, the tumour disap-

peared spontaneously and left in its place a small hole in the aponeurosis, with falciform edges, which easily admitted the tip of the finger. A similar hole was felt on the left side in almost the same position, but there was here no swelling.

M. Féré has since come across many other instances of this peculiarity in patients suffering from epilepsy. He has further found similar swellings in 31 out of 204 insane patients. They were generally situated in the position noted above, and were frequently symmetrical. Full details are given of the observations, but they are mostly directed to the question of the origin of muscular hernias in general.

L'Épilepsie pendant la Grossesse. Par le Professeur Chambrelent (*Journal de Médecine de Bordeaux*). (From abstract in the *Journal de Médecine et de Chirurgie pratique*, Dec 10, 1899).

Professeur Chambrelent reports two cases of pregnancy occurring in epileptic women, in one of which the attacks ceased altogether during the period of pregnancy; in the other case the frequency of the fits was increased. Professeur Chambrelent states that the former effect is the more common, and quotes several authorities to that effect. (Professeur Pinard reported eleven cases. In four the fits ceased altogether during pregnancy, in five there was considerable diminution, whilst in the remaining two no alteration was noted). If, however, the disorder has been aggravated in a former pregnancy the same effect is likely to be produced by a repetition of the condition in the future. Epilepsy has no effect, according to the author, on the course of pregnancy or parturition.

BRITISH CONGRESS ON TUBERCULOSIS.

THE British Congress on Tuberculosis met in London on July 22nd, and continued its meetings till July 26th. Three general meetings were held. At the first, the Congress was

formally opened by the Duke of Cambridge on behalf of His Majesty the King, and addresses of welcome were given to the members, and especially to the foreign delegates, by Lord Lansdowne, Lord Cadogan, Lord Lister and others. The foreign delegates were then introduced by the Earl of Derby, and short speeches were made by several in reply to the welcome offered. During the meeting a telegram was despatched to the King announcing the opening of the Congress, and an answer from His Majesty was subsequently received and read to the assembly.

The second general meeting was held on July 23rd. Lord Lister presided, and an address was delivered by Professor Koch. The speaker insisted that tuberculosis was essentially a preventible disease, and called attention to the fact that most of the individual infectious diseases needed the adoption of special preventive measures adapted to their special peculiarities. Professor Koch expressed his conviction that the sputum was the main, if not the only source of infection in tuberculosis, and that the sanitary measures needed for this disease must be directed towards preventing infection by this medium. He related certain experiments of his own which appeared to show that human tuberculosis was not transmissible to cattle, though cattle were, nevertheless, highly susceptible to infection by the bovine disease. This appeared to be proved by the fact that cattle fed on tubercular sputum obtained from human sources, not only remained in excellent health, but when subsequently slaughtered, showed no trace of tubercular infection. Conversely, Dr. Koch maintained that the bovine disease was probably innocuous to man, and he supported this contention by reference to the extreme rarity of primary tubercular disease of the intestine as seen in the *post-mortem* room even in children. He insisted that the chief measures needed for the stamping out of tuberculosis lay in improving the dwellings of the poor and abolishing over-crowding, in the provision of hospitals for the reception of advanced cases of phthisis, in compulsory notification of the disease, and in the complete

disinfection of the sputum and of infected houses. In conclusion, Professor Koch described the work of the German Central Committee for the Establishment of Sanatoria for the Cure of Consumptives, which it was hoped would result in the provision of 5,500 beds by the end of the present year—sufficient for the treatment of at least 20,000 patients per annum.

At the third general meeting, held on July 24th, Professor Brouardel, Dean of the Faculty of Medicine of Paris, gave an address on the measures adopted by different nations for the prevention of consumption. Professor Brouardel spoke of the primary importance of educating public opinion on the subject, and described the growth of societies abroad which were founded with this object. Alluding to the dangerous practice of spitting in public places, he related the measures which were taken in America and Sydney to put a stop to the habit; and then briefly reviewed the various English Acts of Parliament which had been passed with the object of improving the dwellings of the poor, and the efforts of private individuals in the same direction. Alcoholism, again, was a prolific cause of tuberculosis, and figures were quoted to show that mortality from tuberculosis and alcoholism had many points in common. Especial stress was laid upon the importance of endeavouring to prevent the infection of children, a point which has received attention in various districts of France, where the provision of working gardens for children, young people, and their parents had been made by the means of private munificence. Great hope was to be found as to the curability of phthisis in the scars of old tubercular lesions so constantly found in the lungs in the *post-mortem* room. In the examinations made by Professor Brouardel at the Morgue of bodies of individuals who had spent as much as ten years in Paris, tubercular lesions were found in one out of every two. These lesions, moreover, were often of considerable size, and not infrequently showed the existence of healed cavities; so that local tuberculosis must be looked upon as curable in all its stages. Professor Brouardel then

spoke of some of the measures of prevention adopted in different countries. In Germany there are polyclinics for tuberculosis in the large towns, where patients suffering from consumption are treated, whilst a Committee of men and women visit their homes, see that these are kept clean, and look after the necessary precautions. Similar dispensaries have been established at Lille and Paris, and others are about to be started. In Germany, again, Sanatoria for the treatment of the disease are very numerous, and these institutions are rapidly being copied in other countries. Finally the speaker suggested the disinfection of railway carriages as a wise precaution, and urged notification of cases of phthisis occurring in hotels, lodging houses, and other similar places, so that the necessary measures of disinfection might be properly and effectively carried out.

PROCEEDINGS OF SECTIONS.

SECTION I. STATE AND MUNICIPAL.

I. *A Discussion on the Notification of Tuberculosis.*—The discussion was opened by Professor Janeway, who read a paper by Dr. Biggs, of New York, dealing with the regulations adopted in that and other cities in America. According to these regulations notification was originally compulsory only in the case of public institutions, but physicians were invited to give information as to patients suffering from tuberculosis, such information to be treated as confidential. In all cases in which death was known by the authorities to have occurred steps were taken to thoroughly disinfect the premises, and arrangements were also made for the examination of sputa free of charge. In 1897 the Board of Health of New York introduced compulsory notification, and although the law was not strictly enforced in the case of private patients, public opinion was rapidly being educated in that direction. A sum of 60,000 dollars was also voted for the care and treatment of poor tuberculous patients. As the result of these measures, there had been a reduction of 30 per cent. in the mortality from tuberculous diseases.

The second paper was read by Alderman McDougall on the working of the voluntary notification of phthisis in the City of Manchester. The scheme was at first restricted to public institutions, but in 1900 the practitioners of the city were invited to notify, with the result that up to the present time 628 cases had been notified from private practice. In these cases, when death occurred, and on other occasions, thorough disinfection of clothing and premises was carried out. From March 31st, 1900, to March 31st, 1901, 2,306 houses had been disinfected. Similar statements were made with regard to Sheffield by Dr. Robertson, Boston by Dr. Stone, and Brighton by Dr. Newsholme. Dr. Knopf, of New York, urged the necessity of isolating poor consumptive patients, and of providing funds for the support of their families during such treatment. He also described the terrible incidence of phthisis in the tenement houses of New York. Other speeches were delivered, and the following resolution unanimously passed:—

“That the notification of cases of phthisis attended with tuberculous expectoration, and the increased preventive action which it has rendered practicable, have been attended by a promising measure of success; and that the extension of voluntary notification should be encouraged in all districts in which efficient sanitary administration renders it practicable to adopt the consequential measures.”

2. *Prevention of Tuberculosis During Childhood.*—Dr. Léon Petit, of Paris, read a paper on the establishment of dispensaries for children throughout Paris. During 1900–1 at three of these there had been 30,000 consultations, and 17,000 children had been treated. The mothers were always strongly recommended to suckle their own children, and much good had been done in remedying the bad habits prevalent in the bringing up of children.

Dr. Knopf read a paper on the State and individual prophylaxis of tuberculosis during childhood and the need of children's sanatoria. He laid some stress on the danger of infection by dust, thinking that this might take place in the act of crawling

about the dusty floor. No teachers or children with early phthisis should be allowed to remain at school, and all the inmates should be examined several times a year for symptoms.

3. *Influence of Housing and Aggregation.*—Dr. Harold Coates, of Manchester, gave an account of an investigation by means of injection into animals into the presence of infective material in dust coming from dwellings occupied by consumptive persons. In 50 per cent. of even the cleanest houses infective dust could be found when the patient used his handkerchief or the floor as a receptacle for sputum. Specimens from the waiting rooms of the hospital for consumption at Manchester and one of the general hospitals gave negative results, but two samples taken from the waiting room of a railway station produced tuberculosis. In Dr. Coates' opinion, washing with a solution of chlorinated lime ($1\frac{1}{2}$ oz. to a gallon) was the best means of disinfection for walls, furniture, &c., especially in cases in which there had been direct contact with tuberculous sputum. In other cases, rubbing with bread or dough, washing with soap and water and whitewashing might be sufficient.

Professor von Schrötter of Vienna, advocated the burning of all tuberculous sputum, and Dr. Robertson (Sheffield) insisted upon the importance of adopting a higher standard of lighting and cleanliness in houses and factories. Several other speakers discussed the best and cheapest form of spittoon for the use of phthisical patients.

4. *Control of Meat and Milk Supplies* — Dr. Shirley, F. Murphy and Councillor O'Neill (Belfast), read papers dealing with the measures needed to prevent the sale of tuberculous meat, neither speaker agreeing with Dr. Koch's opinion as to the probable harmlessness of such food. Other speakers followed in the same line, and the Chairman stated that he had received a communication to the effect that Dr. Koch admitted that his new tuberculin gave the same reaction with human as with bovine tubercle. Professor Delépine pointed out that there were a number of authentic instances in which veterinary surgeons had been infected with bovine tubercle.

A resolution was then passed expressing the opinion that Dr. Koch's statement was likely to give rise to serious administrative difficulties in this country, and urging the Congress to appoint a deputation to wait upon the President of the Local Government Board and the President of the Board of Agriculture for the purpose of bringing these views to their notice.

Professor Delépine then spoke of the value of tuberculin as a means of diagnosing early tuberculosis in cattle, and declared that when properly injected it did no harm to the animals. It should not be used, however, when the temperature was raised or during the calving period. The test did not act in advanced cases.

Mr. J. S. Lloyd read a paper by Dr. James Niven on the administration of the Manchester milk clauses, 1899. The following regulations are enforced in Manchester:—

(1) Cows known to be suffering from tuberculosis of the udder must be isolated, and the milk from such cows must not be used for human food. (2) Powers are given to inspect cows, and to take samples of milk from particular teats. (3) If the medical officer of health is of opinion that tuberculosis is likely to be caused by the consumption of a particular milk, the dairyman may be summoned to appear before the Corporation to show cause why an order should not be made prohibiting him from supplying milk within the city. (4) A dairyman supplying milk within the city who has in his dairy any cow affected with tuberculosis of the udder must forthwith give written notice of the fact to the medical officer of health.

Dr. Niven urged (1) that cows suffering from tuberculosis of the udder should be forthwith slaughtered in the presence of the veterinary surgeon; (2) that all restrictions on the inspection of herds supplying the district with milk should be removed; and (3) that a heavy penalty should be attached to failure to notify suspicious conditions of the udder.

It was then resolved, "That power be given by the Legislature to have such cows slaughtered under veterinary inspection."

5. *The International Aspect of Tuberculosis.*—After various references to the measures in force in various countries, the Section passed the following resolution :—

“ That this Section is of opinion that a permanent International Committee should be appointed (a) to collect evidence and report upon the measures that have been adopted for the prevention of tuberculosis in different countries ; (b) to publish a popular statement of these measures ; (c) to keep and publish periodically a record of scientific researches in relation to tuberculosis ; (d) to consider and recommend measures of prevention for the guidance and information of the governments of States and local authorities. This Congress is further of opinion that such a Committee should consist of representatives to be elected by the great national societies for the prevention of tuberculosis, and also of representatives nominated by various Governments.”

6. *Provision of Sanatoria.*—In this discussion the two most important communications were from Mr. Brabrook, C.B., Chief Registrar of Friendly Societies, and Mr. Hoffman, Statistician to the Prudential Insurance Company of America. The speakers were of opinion that neither the Friendly Societies nor Insurance Companies were directly interested in the provision of Sanatoria, or could do anything to further their institution. Resolutions were passed in favour of providing accommodation in hospitals for the isolation of consumptives, or of building separate Sanatoria for their reception.

SECTION II.

MEDICAL (INCLUDING CLIMATOLOGY AND SANATORIA).

DISCUSSION ON CLIMATOLOGY.

1. *Introductory Address on the Classification of Climates and Comparison of Results.* Dr. C. Theodore Williams delivered this address. He adopted the following classification of climates :—

1. *Marine Climates.*—Include (a) the British and Irish sea

coast resorts; (b) the warm marine climates of Madeira, Teneriffe, and the West Indies; (c) Sea voyages.

2. *Dry Warm Climates.*—The desert climates and those of the Mediterranean basins.

3. *Mountain Climates.*

Dr. Williams thought that there were certain cases of chronic pulmonary tuberculosis in which the patients could live in the south coast stations on the British and Irish Channels and nowhere else. Especially was this true of the strumous forms. Sea voyages were most suited to the treatment of cases (1) in which large hæmorrhage accompanies small areas of tuberculisation, (2) where phthisis exists with tubercular gland or joint affections, and (3) in cases of chronic cavity. The patient, however, must be certain of getting good and abundant food, and must have proper cabin ventilation, and the cruise must be principally in temperate, not in tropical climates. The best sea voyage was still probably that to Australia and New Zealand. Another good trip was to Brazil by Lisbon, Teneriffe, Rio de Janeiro and Buenos Ayres.

In dealing with the desert climate of Egypt, Dr. Williams stated that, although improvement was very common, he had never witnessed from it the results which he obtained from high altitudes. The patients were relieved, but were not rendered more vigorous or fit to resist the vicissitudes of the English climate. Such climates were best suited to elderly patients and to those who were unable to take exercise. The resorts on the Mediterranean Basin should be more largely and more systematically used, and sanatoria be more freely provided. The conditions most suitable for such climates were—(1) phthisis in which inflammatory processes have played a large part in predisposing to the disease, (2) strumous phthisis, (3) laryngeal phthisis, (4) unilateral phthisis, and (5) phthisis with feeble circulation, and advanced conditions in which high altitudes could not be borne.

The high mountain climates were to be preferred whenever possible. Statistics of 385 patients were given, showing the

results after periods of residence varying from three months to nine years. 173, or 45 per cent., completely recovered; 77, or 20 per cent., greatly improved; and 54, or 14 per cent., improved. The stationary cases numbered 5, or a little over 1 per cent.; whilst those which got worse amounted to 46, or 12 per cent. Of the latter patients 19 died in the course of treatment. Figures were also given showing the local results and the influence of the climate on the chest measurements.

Dr. Williams' chief conclusions were summarised as follows:

1. That the respiration of the rarefied atmosphere produces hypertrophy of the healthy lung and local pulmonary emphysema around the tuberculous lesions, giving rise in due time to thoracic enlargement. Caseation and calcification of the lesions are promoted.

2. That these changes are accompanied by general improvement in digestion and assimilation, the cessation of all symptoms of disease, the return of natural functions, by gain of weight, of colour, of nervous and muscular activity, and of respiratory and circulatory power.

3. That the climate is specially beneficial in hæmorrhagic phthisis, and phthisis in which hereditary predisposition is strongly marked, and is well suited to chronic tuberculosis of the lungs in general, provided the extent of lung involved is not too large or the disease accompanied by much fever.

4. That males and females seem to do equally well and to profit most between the ages of 20 to 30. Males over 40 and females under 20 benefit least.

5. That the climate is contraindicated in acute phthisis, catarrhal phthisis, in laryngeal phthisis, in cases of phthisis accompanied by great nervous irritability in patients with double cavities, with fibroid phthisis, and in all patients whose pulmonary surface has been so much reduced from any cause that it does not suffice for complete respiratory purposes.

2. *Introductory Address mainly on the Classification of Cases.*

Dr. Burney Yeo delivered the second introductory address,

He described the results of a suitable climate as follows : (1) It relieves or removes catarrhal conditions accompanying the disease. (2) It raises nervous and vascular tone. (3) It increases muscular energy and the ability as well as the desire for exercise. (4) By rendering an open-air life possible, it increases the aeration of the lungs and diminishes the activity of the bacteria. (5) It promotes the activity and tone of the digestive organs, enabling the patient to assimilate larger quantities of food. (6) And finally it improves the moral and mental state of the patient.

As far as the suitability for individual climates is concerned, Dr. Yeo would group cases of phthisis in the following manner :—

1. Cases seen at the very commencement of the disease, and who are otherwise in good health, may be permitted a certain amount of choice in the selection of a climate, provided it allows of many hours being spent daily in the open air, and that they are placed under admittedly hygienic conditions.

2. For progressive febrile cases, repose in bed or on a couch at home, is to be recommended in the best conditions practicable for the free access of air and sunshine to their apartments.

3. For advanced cases home is best if the conditions of home life are favourable, or the warm marine climates with cheerful surroundings if home life is unfavourable or change is urgently desired.

4. For catarrhal cases warm, soothing climates like Madeira or Teneriffe are best.

5. For rheumatic or gouty cases of the fibroid or pleurogenic type—dry, marine climates or the desert climate are most suitable.

6. For the so-called “scrofulous cases,” if free from catarrh, fairly bracing marine climates, if with catarrh, mild marine climates should be prescribed.

7. For most other moderately advanced cases, with the limitations already mentioned, the climate of the high mountains, above the cloud belt, is the most curative.

In the discussion which followed the introductory addresses, the great majority of the speakers were of opinion that the actual climate had comparatively little to do with the results obtained. It was noticeable, however, that those physicians who resided in the high altitude Sanatoria did not agree with this contention.

Discussion on the Therapeutic and Diagnostic value of Tuberculin in Human Tuberculosis.—Dr. Heron thought that the discredit into which tuberculin had fallen was due to (1) its frequent use in unsuitable cases; (2) its administration in too large doses; (3) neglect of the rule that a dose should never be given until the patient's temperature has been normal for the previous twenty-four hours at least; (4) neglect of the rule that the dose of tuberculin should be diminished when its administration has been followed by a rise of temperature; (5) the prejudice raised against the remedy because of the severity of the symptoms which not seldom followed upon its use. Dr. Heron gave particulars of 57 cases treated by him since 1890. Of 51 lung cases 17 had been lost sight of at the end of 1900, and 16 of the remaining 34 were known to be well and earning their living. The cases of lupus did well up to a certain point and then relapsed, but this had not been the case with the new tuberculin. Tuberculin should never be used in cases of mixed infection.

Professor Koch maintained that if the injections were properly made there was very little danger. The injections should be small enough: in weak patients one-tenth of a milligram was enough to begin with, and no further injection should be given until the temperature was again normal. When the first injection gave a faint reaction, a second of the same size usually gave a very marked reaction. With an experience of over 3,000 cases, he was of opinion that almost absolute reliance could be placed on tuberculin for diagnostic purposes, and he had never seen bad results from its use, if the above precautions were followed. In early cases it was therapeutically of great value.

Professor Osler, Professor Fraenkel (Berlin), Professor McCall Anderson and others, stated their belief in the safety of tuberculin; whilst Dr. Theodore Williams and Dr. Huggard were of the opposite opinion. Dr. Denys (Louvain) had found that the injection of tuberculin subsequent to that of tubercle bacilli had had a markedly delaying influence on the spread of the disease in animals.

Dr. France (Claybury), gave an account of his experiences with the patients in an insane asylum. He inoculated 75 cases, of which 20 were clinically free from tuberculosis. These 20 gave no reaction. Of the 55 suspected cases, 45 reacted; of these 45, 34 had since died, and upon 29 *post-mortem* examinations had been made; each of the 29 cases showed active tuberculosis. Of the 11 who were still alive, 6 had very obvious tuberculosis.

Serum Diagnosis.—Drs. Arloing and Courmont (Lyons) stated that they had succeeded in diagnosing 74 per cent. of cases of tuberculosis by serum reaction. Dr. Horton Smith and Dr. Lydia Rabinowitsch had succeeded in only 10 and 12 per cent. respectively.

Use of the Roentgen Rays in the Diagnosis of Phthisis.—After a discussion on Sanatoria for adults and children, which followed somewhat the same lines as the discussion on the same subject in Section I, Dr. Hugh Walsham described the appearances seen in the healthy chest by means of the fluorescent screen, and the modifications which might be observed in cases of phthisis. He concluded that, whilst not detecting pulmonary tuberculosis in the very earliest stage, the X rays were able to show its existence comparatively early in the course of the disease. Dr. Bécère, of Paris, was of the same opinion, and described certain points in the technique of the operation. Dr. Léon (Paris) stated that he had succeeded in detecting phthisis in 98 per cent. out of more than 600 cases.

A few other papers were read in this Section, details of which have not been published.

SECTION III. PATHOLOGY (INCLUDING BACTERIOLOGY).*The Morphology and Variations of the Tubercle Bacillus.—*

Dr. Alfred Moeller, of Belzig, contended that other bacilli besides that of tubercle were acid-fast; also that the tubercle bacillus was capable of undergoing modification in different animals. He had succeeded in modifying it by passage through the slow worm, so that it would afterwards only grow up to 30° C. even after subsequent passage through the bodies of warm-blooded animals. Other speakers dealt with points of resemblance between the tubercle and certain other bacilli.

The Infectiousness of Milk of Tuberculous Cows, and the Diagnosis of Bovine Tuberculosis.—Dr. Lydia Rabinowitsch (Berlin) described certain experiments with the milk of cows, and came to the conclusion that tuberculin was the only rapid and reliable method of detecting bovine tuberculosis with certainty. Even tuberculosis of the udder might be missed without this test. Her conclusions were fully supported by other speakers.

Other papers were read on the varieties of tuberculosis, tubercle and milk, mixed infections in tuberculosis, &c.

The Congress held two concluding general meetings. At the first of these Professor McFadyean gave an address in which he strongly controverted Professor Koch's contention with regard to human immunity to bovine tuberculosis. At the final meeting, a number of resolutions, being the outcome of the deliberations of the various sections, were passed.

REVIEWS.

THE HARVEIAN LECTURES ON PROGNOSIS AND TREATMENT IN PULMONARY TUBERCULOSIS.*

WE welcome the appearance of Dr. Maguire's Harveian Lectures in book form. They are the outcome of a prolonged experience at the Brompton Hospital and contain many valuable clinical observations. Dr. Maguire prefers to speak of phthisis under the headings of invasion, progress and result, rather than to adopt the older classification according to successive consolidation, softening and cavitation of the lung. The greater part of the first two lectures is given up to the first of the three stages.

In the first lecture, Dr. Maguire discusses the effect upon prognosis of the nature and localisation of the physical signs and of antecedent affections. Whilst of opinion that the size of the moist sounds heard in the earliest stage is a matter of importance, the author lays greater stress upon their localisation, insisting especially that a primary lesion of the base is of very favourable import. Out of about 19,000 cases of pulmonary tuberculosis, however, he only came across about 60 of primary basal affection, ruling out, that is, all cases in which the base is affected as a sequel to a lesion at the apex. This latter condition he believes to be often due to aspiration of tubercular debris and to be of very grave prognosis. Phthisis beginning in the middle lobe is also apt to run a rapidly fatal course.

Dr. Maguire calls attention to the gravity of those cases in which the initial lesions are multiple. Especially does he fear what he terms the "multiple pleuritic onset." In this variety, the patient, after a short period of vague ill-health accompanied by

* The Harveian Lectures on Prognosis and Treatment in Pulmonary Tuberculosis. By Robert Maguire, M.D., F.R.C.P., Lond., Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, and Physician to Out-Patients, St. Mary's Hospital. London: Baillière, Tindall and Cox. 1901.

fever, comes to his doctor complaining merely of general languor and illness with flying pains generally ascribed to rheumatism or neuralgia. The most careful examination reveals nothing but here and there a slight pleuritic rub, and, as there is neither respiratory distress nor physical signs of consolidation, it is easy to miss the importance of such cases. Yet Dr. Maguire's experience points to these cases as instances of a wide spread and rapidly advancing infection, and the prognosis given should therefore be more than usually guarded.

Second in gravity to these are the cases described by Dr. Mitchell Bruce as "emphysematous phthisis." Here the patient complains simply of choking cough, acute in onset, and of great difficulty in breathing, whilst on examination nothing but the ordinary signs of emphysema are found. If, however, the sputum be examined for tubercle bacilli, these will be found in considerable numbers, and in any case the disease will in all probability be rapidly fatal.

Thirdly, Dr. Maguire gives an important warning as to the prognosis in cases in which the general condition is bad out of proportion to the extent of the physical signs. Although here and there cases may occur in which, under suitable conditions, the constitutional symptoms may rapidly improve, yet, as a rule, it is not too much to say that such disproportion is of most unfavourable import.

With regard to pre-existing conditions, a florid and apparently full-blooded condition of body is less favourable than anæmia, and the existence of chest deformity has necessarily a bad influence. Primary tuberculous glands is not, Dr. Maguire thinks, a serious feature, and a primary pneumonia on which the tuberculous process is grafted is again a point that need have no specially bad effect on the prognosis. As is well-known, a pleural effusion, so long as it be not purulent, is an accident which may be rather favourable than otherwise, whilst even an empyema which has to be opened is less serious in its effects than would be expected.

In the second lecture, the influence on prognosis of various symptoms is discussed, and still further differentiation is made

between the stages of the disease. The various means by which the tubercular mischief may spread in the lung are also described.

The last chapter is given up to questions of treatment, and describes especially Dr. Maguire's experiments with the injection of antiseptics into the subcutaneous veins. Starting with cyanide of mercury, which was found unsuitable for the purpose, Dr. Maguire at last succeeded in injecting as much as 10 c.c. of a 1 in 2000 solution of formic aldehyde gas at one time without producing any serious effects. It should be added that preliminary experiments were made upon himself before he ventured to put them in practice upon his patients. The author believes that he has had encouraging results from this method of treatment, though it is too early to express a positive opinion. We fear, however, that the treatment is somewhat too drastic to be ever very widely adopted.

CLINICAL EXAMINATION OF THE URINE AND URINARY DIAGNOSIS.*

DR. OGDEN's book consists of two parts. The first, and in our opinion the more important, is an exhaustive and admirable treatise on the chemistry and pathology of the urine: the second concerns itself with the diagnosis of the various diseases which reveal their existence by alterations in the urine, and though perhaps not quite up to the standard of the former part, has yet considerable merit as a clinical study.

The first part may be classed with the best of the books on the examination of the urine. An admirable account is given of the chemistry of the various constituents, and of this part of the subject the writer is evidently a master. The clinical conditions are also mentioned under which each substance

*Clinical Examination of the Urine and Urinary Diagnosis. By J. Bergen Ogden, M.D., Instructor in Chemistry, Harvard University Medical School.

undergoes increase or diminution, and the section is excellently illustrated.

The second part begins with a description of the various forms of nephritis, which is commendably clear and will be therefore warmly welcomed by the perplexed medical student. The accounts of the other affections of the urinary tracts are perhaps somewhat scrappy, but they are followed by good descriptions of chyluria, uræmia, and diabetes mellitus and insipidus. Then follow brief notes on the abnormal conditions met with in the urine in such disorders as gout, epilepsy, anæmia, etc. These should be amplified in any future edition to bring them up to the general standard of the work, which aims, at any rate in the first part, at a very high degree of accuracy and completeness. The book closes with two Appendices on the method of recording urinary examinations and on the reagents and apparatus needed for qualitative and quantitative analysis.

WHEN TO OPERATE IN INFLAMMATION OF THE APPENDIX.*

MR. MANSELL MOULLIN'S admirable clinical lectures on the indications for operation in cases of appendicitis have now reached a second edition. They were originally published in the *Clinical Journal*, but for the present edition they have been partly rewritten. No better statement of the case for operation, or discussion of the difficulties which beset the choice of the most favourable time, has been published, and we wish the lectures a large audience.

The author first describes those cases of recurrent but moderate pain to which the incorrect term "appendicular colic" has been applied. He then passes to the other extreme

* When to Operate in Inflammation of the Appendix. Clinical Lectures by C. Mansell Moullin, M.D. Oxon., F.R.C.S., Surgeon and Lecturer on Surgery at the London Hospital. Second edition. London: John Bale, Sons, and Danielsson, Limited, 1901.

of the scale, and speaks of the fulminating cases of early rupture in the general peritoneal cavity for which operation itself affords but the most forlorn hope. Needless to say, Mr. Moullin would give the patient the chance even here, except when death is a foregone conclusion.

Dealing with the cases intermediate between these two extremes, the writer first considers those in which the symptoms set in acutely from the very first, but in which there is as yet no grave collapse or other evidence of perforation. Here he rightly advocates resort to early operation, and for the most weighty reasons. These are the cases in which an ill-advised delay so often results in general infection of the peritoneum before surgical aid is called in—too late, in all probability, to save the life of the patient. The same advice holds good of cases which begin more mildly, but in which the symptoms steadily get worse during the first forty-eight hours.

But the cases which present the greatest difficulty and are the source of the greatest anxiety to the surgeon are those in which some days have already elapsed since the onset of symptoms, but the general condition, though grave, is not one of such immediate urgency as to call beyond doubt for instant operation. Here, again, Mr. Moullin rightly, as we think, advocates operation, but the question as to the most favourable time is often one of great difficulty. As the case has already gone so far without general peritoneal infection, the longer it can be left, within limits, the more complete is likely to be the separation by adhesions of the inflamed appendix from the peritoneal cavity. On the other hand, there is the danger that at any time the abscess may burst, and the case be rendered practically hopeless. The decision is an anxious one, and it is difficult to state in a few words the principles by which the surgeon should be guided. Briefly, Mr. Moullin contends that (1) if the constitutional or mental condition be such as to suggest severe septic poisoning, (2) if the constitutional symptoms be severe out of all proportion to the local signs, (3) if there be any sign of spread of the peritonitis, and (4) if

any of the chief symptoms, local or constitutional, be getting rapidly worse, then operation should at once be undertaken. If, on the other hand, the case is improving it will be well to wait until the acute symptoms have subsided in order to operate with the greater safety.

The last lecture is devoted to the consideration of the import of individual symptoms.

APHORISMS, DEFINITIONS, REFLECTIONS, AND PARADOXES.*

IN a previous publication Dr. Rabagliati has recorded his opinion that nearly all disease arises from the taking of too much food, and in the present volume he again returns to the charge. We do not doubt that he is right in his contention that much mischief arises from excessive feeding, and that many individuals might be the better for a more restricted diet; but, unfortunately, many of his statements and conclusions are so exaggerated, and others clothed in such extraordinary language, that it needs a more than ordinary stock of patience to follow him in his arguments. We venture to quote one instance of the latter peculiarity. In paragraph 71 the author wishes to state his opinion that errors of feeding are the most important sources of disease, and that the fault may lie in taking too little or too much food, or in eating too many or too few times in the day. This is how he expresses himself:—"Of all the causes of disease, *kako-siteism* (not vitiation of air) is by far the most important. *Kako-siteism* may take the form of *oligo-siteism*, *oligaki-siteism*, or *a-siteism*; or it may take the form of *poly-siteism* and *pollaki-siteism*; but it far oftener takes the form of *poly-siteism* and *pollaki-siteism* than of *oligo*, *oligaki*, or *a-siteism*." We believe that there is much in this book which

Aphorisms, Definitions, Reflections, and Paradoxes. By A. Rabagliati, M.A., M.D., F.R.C.S. Ed., Honorary Gynæcologist, late Senior Honorary Surgeon, Bradford Royal Infirmary. London: Baillière, Tindall, and Cox, 1901.

is worth reading, for it embodies the results of a wide and prolonged experience and contains much sound common sense. It is all the more to be regretted, therefore, that it is spoiled by the extravagance to which we have referred.

THE HEALTH RESORTS OF FRANCE.

Two years ago Dr. Carron de la Carrière made arrangements for the visit of a party of medical men of all nationalities to the principal health resorts in the centre of France and the district of Auvergne. The party was placed under the direction of Dr. Landouzy, the well-known Professor of Therapeutics in the Faculty of Medicine of Paris. The following year a similar tour was arranged to the resorts of south-eastern France. We are requested to state that this year an excursion to the various sanatoria and bathing places of Savoy will take place from September 1st to the 15th, and will be under the direction of the same distinguished teacher. Tickets, inclusive of all expenses, will be issued by Dr. Carron de la Carrière, 2, Rue Lincoln, Paris, for the sum of 300 francs. Applications should be sent in if possible before the 15th of August.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

Messrs. Burroughs and Wellcome send us samples of Tabloid (Hypodermic) Hyoscine Compound. Two formulæ are employed, called Tabloid A and B respectively. Each contains gr. $\frac{1}{160}$ of Hyoscine Hydrobromide combined with morphine sulphate and atropine sulphate. The quantity of morphine sulphate in the two formulæ is gr. $\frac{1}{6}$ and gr. $\frac{1}{4}$ respectively, and that of the sulphate of atropine gr. $\frac{1}{160}$ and gr. $\frac{1}{120}$. The addition of the two latter drugs is believed to increase the action of the hyoscine.

New Books, etc., Received.

From the F. A. Davis Company—

Annual and Analytical Cylopædia of Practical Medicine. By CHARLES E. DE M. SAJOURS, M.D., and One Hundred Associate Editors. Vol. VI.

From Smith, Elder and Co.—

A Retrospect of Surgery during the Past Century. By JOHN POLAND, F.R.C.S.

From Baillière, Tindall and Cox—

Typhoid the Destroyer of Armies and its Abolition. By LEIGH CANNEY, M.D. (Lond.).

From Rebman, Limited—

A System of Physiologic Therapeutics. By GEORGE W. JACOBV, M.D. Vols. I. and II.

Uterine Fibromyomata. By E. STANMORE BISHOP, F.R.C.S. (Eng.).

The Students' Manual of Venereal Diseases. By F. R. STURGIS, M.D. Seventh Edition. Revised and in part re-written by F. R. Sturgis, M.D., and Follen Cabot, M.D.

From Macmillan and Co. Limited—

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D. (Lond.), F.R.C.P., F.R.S. (Ed.). Vol. III. Diseases of the Nervous System.

We have also to acknowledge the following—

What Routine shall we adopt in examining the Eye Muscles? By ALEXANDER DUANE, M.D.

A New Clinometer for Measuring Torsional Deviations of the Eye, delineating Paracentral Scotomata and Metamorphopsia, and detecting Simulation of Blindness. By ALEXANDER DUANE, M.D.

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THE
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ORIGINAL COMMUNICATIONS.

SCOLIOSIS.*

BY W. DUNCAN LAWRIE, M.D., F.R.C.S.E.

Pro tem. ASSISTANT SURGEON, ROYAL ORTHOPÆDIC AND SPINAL
HOSPITAL, BIRMINGHAM.

Mr. President and Gentlemen,

It has been rather quaintly remarked by a distinguished Birmingham Surgeon that it is a pity the spine cannot cough. This pithily expresses the desire of that gentleman that lateral curvature of the spine should be diagnosed at an early stage, when treatment would be more effective than is often possible. When a patient has a cough, serious pulmonary disease is at once suspected, but, if the same individual should be afflicted with a prominent shoulder or hip, the parents are comforted by the reflection that the child will "grow out of it."

This conviction is so general that we might almost call it public opinion on the subject, and although such opinion is at times entirely unsupported by reason, yet it is worthy of attention, for, if wrong, it should be corrected, if right, we shall certainly learn something by giving it our very careful attention.

Dressmakers tell us that young girls very frequently have one hip more prominent than the other, and tailors complain that many of their customers require extra padding over one shoulder, and we know that very few of these cases progress to serious

* A paper read before the Birmingham University Medical Society, Winter Session, 1900-1901. Illustrated by lantern slides.

deformity. It is, moreover, not difficult by daily observation to see many unequal hips and shoulders. Further, Eulenberg found in a school in Neuchâtel, that, among 381 girls, 156 had more or less lateral curvature of the spine.

Granted that many girls have a slight lateral curve, is there any reason to expect that they will grow out of it? The conditions of a girl's life are constantly changing. At school she is in a different class each year. Writing may occupy most of her time one year, and be superseded later by other subjects requiring less asymmetrical postures. One year the hygiene of the class-room may be defective, the following year the conditions may be more favourable. Finally she leaves school and other occupations engage her attention, and, being no longer exposed to the influence of long-continued and constrained positions, and better positions being habitually taken up—perhaps at the prompting of the dressmaker—the natural symmetry of the body is restored and muscle sense re-educated to maintain the body in good position.

This makes the prognosis of lateral curvature particularly difficult and explains the rarity of a case appearing for treatment before the disease is well-established.

If most girls are asymmetrical and either grow out of it, or, at any rate, do not undergo progressive deformity, how are we to distinguish those cases which, untreated, inevitably end in serious deformity.

Each case must be considered from the recruiting-serjeant's point of view.—What is the child's age, height, weight, chest-expansion, musculature, and how much work has she to perform?—Is her physique equal to it?

There is no ratio between mental capacity and physical strength. At school children are arranged according to their mental capacity; thus children of unequal physical powers are called upon to endure equally arduous work. Work at school necessitates, to a great extent, asymmetrical postures. These tend to cause in all a lateral curvature. The weak succumb; it is a case of the survival of the fittest.

Next we have to consider the habits of the child. Usually we find that the child with lateral curvature is not possessed of brilliant mental capacity. She is, on the other hand, the docile child, who distinguishes herself by gaining good-conduct prizes, prizes for regular attendance and for writing. We must enquire if work is mixed with a proper amount of play. During work constrained asymmetrical positions are assumed, respiration is shallow, the chest is cramped, the blood is insufficiently oxygenated, and the circulation sluggish. During play constrained positions are abandoned, respiration is free, the blood is well oxygenated and circulates freely. Work acts on a child like a cumulative poison, and play is its antidote.

In 1854 Adams recorded an interesting case of lateral curvature. Gideon Mantell, a medical man and a distinguished geologist, at the age of 52 suffered from excessive pain in the back. He was thrown from his carriage, and the pain increased. Numbness appeared in the left foot. Later he lost sensation and motor power in the lower extremities, and had loss of control of his bladder and rectum. Sensation and motor power gradually returned. The pain continued, and a tumour was noticed at the back with supposed fluctuation. In a period of nine months he consulted Liston, Brodie, Bright, Laurence, Stanley, Coulson, etc.

Liston diagnosed an abscess, and offered to open it. A malignant tumour was also suspected. Finally, from an overdose of opium which he took to relieve pain, Dr. Gideon Mantell died.

He had left instructions that a *post-mortem* examination should be made. At the *post-mortem* examination there was found a very severe lateral curvature to the left, with rotation, involving the bodies of the two lower dorsal and the three upper lumbar vertebræ.

The tumour which had been diagnosed an abscess and which Liston had undertaken to open, was produced by the transverse processes projecting on the left side, causing a prominence of the left erector spinæ. The transverse processes of the first,

second and third lumbar vertebræ on the left side projected exactly to the level of the apices of the spinous processes. No lateral deviation of the spinous processes was found until the affected position of the spine was removed from the body, when a deviation was found, measuring half an inch, from a vertical line drawn from the spinous process of the tenth dorsal vertebra to that of the first sacral bone. This distance was easily diminished to a quarter of an inch, by a slight effort of straightening. There was no trace of any morbid growth, abscess, or of any inflammatory process.

Adams comments as follows on the case :—"The fact of the greatest practical importance which the specimen illustrates and clearly proves is one, which, I believe, has not hitherto (this was 1854) been described, viz., that a very severe degree of lateral curvature with transverse rotation of the bodies of the vertebræ, accompanied by lateral absorption of the bone and intervertebral cartilages to a considerable extent and attended with all the distressing symptoms of the most aggravated form of this affection, may exist with only a very slight deviation of the apices of the spinous processes, in short, that the severest degree of deformity may exist internally without the usual indication in respect of the deviation of the spinous processes externally."

We learn from this case to put no dependence on the position of the spinous processes in the diagnosis of lateral curvature. This is as we should expect. The spinal column consists of two parts :—the anterior column, which supports the weight of the body, and the posterior or arch column, which normally transmits no weight. Lateral curvature is an affection of the anterior supporting column, and only affects the arch column secondarily.

By the observations to be mentioned we shall show that lateral curvature of the spinal column is impossible without, at the same time, a rotation of the bodies of the vertebræ.

The term scoliosis from skolio, I twist, is used to designate this combination of lateral curvature and rotation.

We shall now consider the question of rotation of the vertebræ.

In 1866 Von Meyer published a very important paper on Lateral Curvature. He experimented on spines, *post-mortem*, and found that, on flexing laterally the spinal column, a rotation of the bodies to the convexity of the curve was produced as follows:—

In a new-born child by flexing the spine laterally between the cervical and lumbar regions, a rotation occurred with such power, that he could feel the spine twist in his hands.

At the age of 17 months, 9 years, and 14 years rotation also occurred on flexing the spine laterally, although the degree of rotation was less at 14 years of age than in the younger spines. At the ages of 16 and 24 rotation could only be produced after removing the anterior common ligament, and at the age of 27 no rotation could be produced. He fixed the pelvis of this last spine in a vice for two days with a weight of 20lb. attached to the spine, but got no rotation. Von Meyer concluded that rotation always accompanied lateral curvature when this appeared before the age of 15 years. After this age rotation was difficult to produce.

During last year, however, Lovett has published experiments which show that rotation always accompanies lateral flexion when the spine is flexed antero-posteriorly at the same time, irrespective of age. He made his results more exact than Von Meyer by the use of thin boards attached to the chest and pelvis and bonnet-pins driven into the spinous processes as indicators. He experimented on six cadavers.

The pelvis of a normal cadaver was fixed in a vice and the upright spine flexed, and by a cord attached to the atlas pulled to the left side. A very marked rotation of the vertebræ occurred throughout the whole column.

On the living subject an experiment was made on two professional models—"young women, and markedly flexible; one had been on the stage as a dancer, and the other kept herself

flexible by exercises to enable her to take difficult poses without lameness."

If the model bends forwards and flexes her spine to the left, the same phenomenon occurs that is seen in the cadaver. The spinous processes turn to the concavity of the curve and the vertebral bodies to the convexity, and the right side of the chest becomes more prominent behind.

He concludes from this that lateral bending in both cadaver and model in positions of marked flexion is accompanied by rotation, and is of the same type as in scoliosis.

It would appear at first sight that the results of Von Meyer and Lovett are contradictory, for, whereas Von Meyer was unable to obtain rotation at all after the age of 24, and only after 15 when he had divided the anterior common ligament, Lovett succeeded in all cases without reference to age. But there is this important difference that Lovett strongly flexed the spine antero-posteriorly before flexing it laterally.—Now strong flexion relaxes the anterior common ligament, and, what is more important, separates the articular processes and these processes, when in opposition as they are in the upright spine prevent rotation of the bodies. The articular processes are poorly developed before the age of 15 and the direction of their facets is indifferent—hence the ease with which rotation is produced on lateral flexion of the spine before the age of 15. In this connection we must keep in mind that 90 per cent. of cases of lateral curvature begin before the age of 17.

The following is the explanation of the rotation advanced by Lovett: "The vertebral column may be looked upon as a flexible rod, and should obey the laws governing flexible rods in general under similar conditions. From the mechanical point of view, torsion results from any motion in which all the particles of a straight flexible rod do not move in parallel planes. Consequently, if such a rod is bent in two planes at the same time, torsion must inevitably occur. The vertebral column is not a straight flexible rod, but one bent in the antero-posterior plane by a series of gentle curves; side-bending must therefore

inevitably lead to torsion because it means bending in two planes."

Further, Lovett says : " It seems very unlikely that pure lateral flexion of the spine ever exists. A piece of rattan, a gum elastic catheter, a piece of rubber tubing, or a strip of sponge rubber, round or square, behave all in the same way, and rotate in the same direction as does the spine when placed in a similar position to those described in the experiment on the model and cadaver."

These views on the mechanical side of the question Lovett attributes to Professor Hollis of Harvard University.

ETIOLOGY.

The chief causes of scoliosis may be classified in three groups :—

- I. Those due to malposition of the head as from torticollis.
- II. Those due to malposition of the shoulders as from bad postures in writing, etc.
- III. Those due to malposition of the pelvis, which may be due (1) to a short leg or to the habitual assumption of the stand-at-ease position, or (2) to a faulty position in sitting.

Time forbids anything like a complete discussion of the various causes. Excluding cases due to torticollis, where the spine is permanently flexed laterally and antero-posteriorly as in Lovett's experiments, the ultimate cause of scoliosis due to malposition of either shoulders or pelvis is muscular weakness. This is true of those cases due to a short leg, for it is found time after time that a short leg *per se* does not cause scoliosis. Another factor is required, and that factor is muscular weakness. The effect of muscular weakness in leading to scoliosis is well seen in cases of syringomyelia, Friedrich's disease, and infantile paralysis. More common causes of muscular debility leading to scoliosis are rickets, anæmia, dysmenorrhœa, and overwork. The muscular weakness may be real or only relative, as where a young girl has to carry a baby, or, as in a recent

case, where a small boy is employed in carrying under his arm weighty baskets.

During infancy the child is exposed to the danger of improper feeding, leading to rickets with its accompanying extreme muscular weakness. The child is fretful and restless, and insists upon being nursed throughout all its waking hours. The mother nurses the child always on the same arm and the child thus constantly takes up a similar position, sitting on an oblique seat—the mother's arm—and resting in a condition of muscular relaxation with its shoulders on its mother's breast.

There are thus two points where a bending force is applied to the spine, at its base through the oblique pelvis and in the dorsal region through the shoulders. Under these circumstances scoliosis frequently results.

At a later age the mother nurses her child on her knee instead of her arm and the knee forms an oblique seat. Later in life the scene changes from the nursery to the class-room, and Eulenberg says that 90 per cent. of cases of lateral curvature are developed during school life.

The most trying exercise is writing, and the posture assumed in writing the old-fashioned sloping hand at a too high table causes sometimes a dorsal curve to the right, sometimes to the left, according to the arm which supports the weight of the trunk.

Too much standing at school is also a potent cause. No one stands absolutely erect for any length of time—a stand-at-ease position is taken up. Where it is possible to change the position, so that the weight is supported first by one leg and then by the other, no evil results. But in school where restlessness is condemned and the children are taught to stand still, one position of ease will be selected, and since habitual postures soon become the most comfortable postures, the child will invariably when standing, fall into the same position of ease.

There are two stand-at-ease positions commonly selected. One is the stand-at-ease position of the drill-ground: one leg pushed behind the other supports the body, the anterior leg is bent and carries no weight. In the other stand-at-ease position

one leg is put well in advance of the other and the weight of the body is transmitted through the anterior leg, neither leg being bent at the knee.

Both these positions cause important changes in the position of the pelvis. In the first place, in order that the centre of gravity may fall over the base of support, the supporting leg is made more oblique, and the mid-point of the pelvis, instead of coinciding with the mid-point between the two feet, approximates to the mid point of the supporting foot. The pelvis becomes amesial, and with it the whole trunk. The pelvis also becomes oblique; the crest of the ilium over the supporting limb is higher than the opposite iliac crest.

On leaving school the child is exposed to the risk of long hours at the counter, desk, factory, or in domestic service, and, although she has successfully battled with improper feeding, and without physical harm undergone the ordeal of mental education, she may now fall a victim.

DIAGNOSIS.

The diagnosis is made as follows :—

In the lumbar region the transverse processes project on the side of the convexity of the curve causing prominence of one erector-spinae. The erector-spinae will be depressed on the side of the concavity, and there will result an apparent diminution in size of that muscle.

In the dorsal region the angles of the ribs project on the side of the convexity, and are carried forward on the side of the concavity. On the front the reverse occurs, *i.e.*, the breast projects on the concave side of the curve and is less prominent on the convex side.

The diagnosis of lateral curvature is made by observing the position of the transverse processes in the lumbar region of the rib angles in the dorsal region.

The patient must be uncovered sufficiently to expose the back, the crests of the ilia, and the buttocks, including the gluteal cleft. Shortness of a leg must be excluded, and, if present,

compensated for by placing a book under the shortened member. The patient stands easily with her arms hanging down at her side, with the back to the light.

The levelness of the iliac crests can be estimated by comparing with a dado or other horizontal line. The prominences of the erector-spinæ must be carefully compared—a slight increase of prominence of one side being the earliest sign of a commencing curvature. Any difference in measurement of the intervals between the costal margins and the iliac crests must be noticed. The region of the angles of the ribs is also investigated, and the direction of the posterior surface of the scapula noticed. In a dorsal curve the posterior surface of the scapula on the side of the convexity looks upwards as well as backwards, instead of directly backwards, and the angle projects.

The patient is now made to stand up as straight as possible. This, by contraction of muscles, makes more prominent any inequality in the erectores spinæ, and it also shows what amount of improvement we may expect from treatment.

Next the patient should face the light and bend down as if trying to touch the ground with her hands. She then slowly raises herself into the erect posture, and, as each segment of the body is seen against the light, any unevenness is brought out.

TREATMENT.

Ambrose Parey, born 1535, died 1590, the most celebrated French surgeon of the 16th century, and the first to treat gunshot wounds systematically and to use the twisted ligature in harelip, writes as follows:—

“Of Amending the Deformity of such as are Crook-Backt — The bodies of many, especially young maids or girls, by reason that they are more moist and tender than the bodies of boys, are made crooked in process of time, especially by the wrenching aside and crookedness of the backbone. It hath many causes, that is to say, in the first conformation in the womb, and afterwards by misfortune, as a fall, bruise,

or any such like accident, but especially by the unhand-some and undecent situation of their bodies when they are young and tender, either in carrying, sitting, or standing, and especially when they are taught to go too soon saluting, sewing, writing, or in doing any such like thing. In the meanwhile, that I may not omit the occasion of crookedness that happens seldom to the country people, but is much incident to the inhabitants of great towns and cities, which is by reason of the straightness and narrowness of the garments that are worn by them, which is occasioned by the folly of mothers, who while they covet to have their young daughters' bodies so small in the middle as may be possible, pluck and draw their bones awry and make them crooked, for the ligaments of the backbone being very tender, soft, and moist at that age, cannot stay it straight and strongly, but being pliant easily permits the spondels to slip awry inwards, outwards, or sidewise, as they are thrust or forced. The remedy for this deformity is to have breast-plates of iron, full of holes all over them whereby they may be lighter to wear; and they must be so lined with bombaste that they may hurt no place of the body. Every three months new plates must be made for those that are not yet arrived at their full growth, for otherwise, by the daily afflux of more matter they would become worse; but these plates will do them small good that are already at their full growth."

The treatment should in the first place be preventive. The fretful child, requiring constant nursing, should be rendered less fretful by attention to the cause, most frequently, digestive disorder from improper feeding. Tea should be interdicted—a most fruitful source of peevishness in children. You will find it difficult to get the mother to fall in with your ideas on this subject. She will tell you that the child insists upon having tea and in fact screams until she gets it. The answer is, the more tea the child has and the stronger the tea is, the more will the child scream for it and the more peevish and irritable it will become.

Importunity, however, in the shape of a screaming child is a great deal more penetrating than the wisest of reasoning.

Mothers should be taught to nurse their children on alternate arms.

The hygiene of the school should be carefully and scientifically regulated. Every care should be taken that the child shall be prevented from assuming cramped positions, errors of refraction should be corrected by suitable glasses. A shortened leg must be attended to. The class-rooms must be well lighted, and the light must be properly directed. Snell says lighting from the roof would be an ideal method, but as this would necessitate one-storey buildings, it would be well-nigh impossible in towns. It is to be desired that schools should have open spaces around them, and should not have their light shut out by being placed in narrow streets.

Light should fall from the left. Light from the right is objected to, because the hand and arm throw the writing in the shade. Light from the front is too dazzling for those nearest the window. The windows should have light frames, and should not be divided up into a number of small panes.

Seats should be made to suit the size of the child. Snellen has observed that it is absolutely impossible that a tall boy and a short boy will both sit equally well at the same desk. He says it is just as unlikely as that the same clothes would fit the same people. The Glendenning seat is recommended by Roth, and, as it gives support to the shoulders, it is preferable to Priestley Smith's.

The writing to be recommended is the vertical writing as now taught in the board schools, which can be learnt without undergoing the contortions necessary for the Italian hand. Clear good-sized print should be employed for reading.

Children should not be kept too long standing during their lessons. It seems quite common to keep the children standing for half an hour at a time in the board schools, and I came across a very bad lateral curvature the other day due to this cause. The teacher, according to the patient's story, had been

in the habit of punishing her class by making all the children stand for long periods of time, even as long as two hours at a stretch.

The same care must be taken at home with regard to seating and light, and too many home lessons must not be given. The school hours must not be too long nor too continuous ; intervals of relaxation must be frequent.

When a curve has commenced, the first thing to do is to find the cause. In infancy this is usually the method in which the child is nursed ; nursing must be discontinued and the child may be carried about in a wicker basket and its general health attended to.

In a school-girl, chlorosis, menorrhagia, constipation, etc., must be cured. The conditions of her life must be investigated and any faults rectified—bad postures corrected, less work and more play ordered. Her muscular system must be improved by carefully directed exercises and massage. Special care must be taken in every case to develop the expansion of the chest to the utmost. School should for a time be stopped entirely and the whole energies directed towards improving the physique. The clothes of the child should fit her when she is holding herself in the best possible position, not the worst. The corsets should be light and should have a piece of elastic let in each side, so that they may interfere as little as possible with respiration. The boots worn should be broad soled, square-toed and low-heeled.

In very bad cases an instrument may be ordered, but this must not interfere with the application of the principles already laid down, and much can be done even in a bad case, by properly directed gymnastics—for instance, the respiratory capacity of the chest can be increased to a great extent provided the patient is still young.

An instrument must be so made that it does not in the least interfere with proper chest-expansion nor with the action of the muscles of the back, but, according to Noble Smith, "should act chiefly as a support ready to rest the spine in an upright

position directly the muscles are unable from fatigue to keep the column upright.

In the worst cases Barwell has recommended rachilysis. Force is applied to the apices of the curves by the surgeon himself by means of pulleys and slings. The ligaments are thus stretched, and, according to Barwell, the improvement after twenty minutes stretching can be shewn by the scoliometer to amount to several degrees.

Roth allows bicycle exercise at the end of the first month's treatment, and considers it one of the most suitable out-door exercises for girls with lateral curvature. Of course, it must be carried out with certain restrictions as to speed and distance.

In concluding, I must emphasise the fact that the prevention of scoliosis is much more feasible than its cure. To quote Burney Yeo :—

“Those who are entrusted with the care of the young of both sexes are, perhaps, sometimes apt to regard with too little attention and interest the physical development of those under their charge, and this from a too great eagerness to promote their intellectual culture. It should be remembered that the education of the mind is and should be a life-long process—there is no need for hurry; but that the development of the body is strictly limited to a certain period of existence, and becomes finally and irrevocably arrested at a given date.”

If this fact were kept steadily in view by all who have to do with the education of the young, physical development would occupy a more important place in child-life than it does at present, and much deformity would be averted.

A CASE OF PROLONGED SEPTICÆMIC INFECTION.

BY F. VICTOR MILWARD, M.B., B.C. CANTAB., F.R.C.S., ENG.,

WITH REMARKS BY

JOHN HEWETSON, M.D. EDIN., F.R.C.S., ENG.

THE following case of chronic septicæmia terminating in pyæmia, presents some rather unusual features, and those I wish more particularly to draw attention to are (1) The obscurity of origin of the sepsis; (2) The low virulence of the causative micro-organism; (3) The result obtained by serum treatment; and (4) The effect produced on the white blood corpuscles.

I am much indebted to Mr. Geo. Heaton for allowing me the treatment, and publication of the case.

History of the Case:—

The patient, a delicately built young woman, of a highly nervous temperament, aged 24, was confined of her first child on July 8th, 1900.

Dr. C. J. Dudley of Stourbridge, who was in attendance, tells me that there was nothing unusual about the labour, but that she was up on the twelfth day, and left for Birmingham a few days afterwards, at which time there was slight inflammation about the left breast.

On coming to Birmingham, she appears to have neglected this latter trouble, for Dr. Oswald R. Lewis, to whom I am indebted for notes, was not called in until August 6th, about a fortnight afterwards. He then discovered a very large mammary abscess. With surgical treatment this had almost healed in ten days, but as constitutional symptoms still remained, the abscess was reopened and drained. The symptoms mentioned were—a temperature varying between 100° and 105°, tinnitus, night sweats, slight abdominal tenderness, and diarrhoea, but there was no vaginal discharge, and the urine was found to be normal. She was treated with salol, salicylate of sodium,

salicylate and sulphate of quinine, iron and acids. The symptoms did not abate, however, and after six weeks' treatment, she was persuaded to go the General Hospital, which she had hitherto refused to do.

On admission to the hospital, on Sep. 11th, the left breast had completely healed. A glance, however, sufficed to show that she was suffering from some severe general disease. The temperature was $103^{\circ}4'$; pulse 100 to 120 and over. There was a malar flush and sordes on the teeth, tenderness of the abdomen, especially marked in the iliac fossa, and slight tympanites, slight splenic enlargement and constipation, and a very dry harsh skin. There were no adventitious sounds in the heart or lungs, but the heart sounds were distinctly feeble.

A vaginal examination, made on Sep. 11th and again on Sep. 22nd, by Dr. Malins revealed nothing abnormal in the pelvis. With symptoms mainly of an intermittent temperature, having daily variations between 5° and 7° , sometimes up once, sometimes twice in the twenty-four hours, of splenic enlargement, and a furred tongue and sordes, the diagnosis lay between several conditions—viz., between septic infection, enteric fever, rheumatic fever, or malaria, but not typical of any particular one. Against septic infection was the fact that there was no increase of leucocytes in the blood, while the Widal test, made on two separate occasions, gave a negative reaction.

On Sep. 18th the right shoulder and both knees became very hyperæsthetic, but as yet no fluid could be detected in the joints. The heart being now very feeble, she was given strichnine and digitalis, and these having the desired effect, she was given salicylates in full doses two days later. The pain in the shoulder having disappeared, and that in the knees being slightly relieved, with the appearance of some sweating, and a sudaminous rash; the case looked still more like one of acute rheumatism. Its true nature was, however, revealed by the appearance of a subcutaneous abscess over the sacrum on Sep. 25th, and confirmed by an examination of the blood on

Sep. 26th. Both pus and blood were found to contain a pure growth of streptococci.

On Sep. 28th treatment by injections of antistreptococcus serum was commenced, and during the next four days five injections were given (70 cc. in all). For seven days after the commencement of the serum treatment the patient showed no improvement, the temperature varying, morning and night, between 98·6 and 104·6. The serum was therefore discontinued, but after Oct. 4th the intermissions became less and less marked, until the time of her death on Dec. 3rd. Towards the end an average daily variation of only 1° to 3° was noticed.

As before stated, on Sep. 18th, the right shoulder and both knees became tender and painful on movement. Pain had passed away from the shoulder by Sep. 22, but the knee trouble increased, and infusion into both joints commenced about Sep. 27. The right hip joint likewise became exceedingly painful about this time, but later on spontaneously recovered.

On Sep. 29th 3ij of glairy turbid synovial fluid were aspirated from the left knee joint. This proceeding made her condition much more comfortable, but as the effusion had returned by October 2nd, the process was repeated, and the 3ij, which were now removed, were of a more purulent character than those of the 29th Sept.

The fluid removed on the latter date had been in the meantime cultivated, and showed a pure growth of streptococci, but since the inflammatory symptoms were not acute, there being no redness, or œdema of the joint, and but slight tenderness, it was determined to attempt, once more to save the joint from future ankylosis if possible. The synovial cavity was therefore washed out on Oct. 5th with 3 quarts of iodine solution (3j—Oj), and four small gauze wicks were inserted into four small incisions made on each side of the joint. Notwithstanding these efforts, the knees never completely recovered, and soon became fixed by thin fibrous adhesions. Subsequently collections of pus formed over the right knee, the back, over the right shoulder, and in the left pleural cavity. These all

appeared very quietly, without any exacerbations of temperature, or pain, and all contained pure growths of streptococci.

She died on Dec. 3rd of pneumonia of two days' duration, during which the temperature rose to 103° , but for a week preceding this date the temperature had only varied 1° or 2° . In the very low asthenic state which she had now reached the end was brought about suddenly by cardiac failure, while dressing the left empyema wound, the right lung being already embarrassed by pneumonia.

A *post-mortem* examination made on the following day revealed the following appearances:—

General congestion of all the viscera, as found in cases of generalised infection. The congestion was, however, not strongly marked, and in this respect the liver, spleen, and kidneys did not suffer to any great extent.

The heart was normal, the valves having no vegetations. There was pneumonia of the right lung, and pleuritis of that side. The left lung was partially collapsed owing to the empyema which had affected that side. The liver was fatty, the spleen somewhat enlarged but not softened, the renal epithelium showed no signs of cloudy swelling. Nothing abnormal could be detected in the pelvic organs. The left knee joint contained half a drachm of flocculent pus, while the cartilages were eroded and partially united by adhesions. There were healed and partially healed subcutaneous abscesses, which had been drained, over the sacrum, over the right shoulder, over the right knee, and in the left breast; but no pyæmic deposits were found in the viscera. No evidence of venous thrombosis, septic or otherwise, was found in the broad ligaments or elsewhere, and nothing was found to indicate the place from which the emboli originated.

Remarks.—Not the least remarkable of the points to be noted in this case was its chronicity. Though the exact position of the septic focus was not apparent, the blood seems to have become infected about the time that the mammary abscess was noticed by Dr. Lewis on August 6th. Streptococci were found

in the blood on Sep. 26, and had probably been there some weeks. This gives the disease a duration in all of four months. Later on, when pyæmic deposits were taking place, a second examination of the blood showed it to again have become sterile. Where, then, was the focus from which these metastases were originating? The breast had completely healed, and no primary source of infection beyond the breast was ever discovered. It is quite possible that a few cocci still lingered in the blood undiscovered by cultivation of the specimen taken on the second occasion, and that these caused the development of the abscesses.

At first sight it would appear that treatment by antistreptococcus serum had caused the disappearance of organisms from the blood, and I regret now that not more than 70 cc. were given. It was discontinued because no abatement of the temperature or amelioration of symptoms took place for seven days after its commencement. Shortly after its discontinuance, when the left knee-joint had been thoroughly drained, the variations of temperature were much lessened (viz., from about 5° to 2°), and I believe that this rather than the serum treatment brought about the improvement.

This case seemed a typical one for the trial of serum therapeutics, and I must own to considerable disappointment at its failure. There have been shewn to be many varieties of streptococci, and where one make of serum fails, it has been advised to try others, in order that if possible the antitoxin of the toxin present may be employed. It is to be hoped that a polyvalent serum will soon be manufactured. In recorded successful cases, an immediate benefit seems to have accrued, and I do not find a case in which the temperature came down some days after the injection of the serum. In looking up reported cases for the last three years, one finds that writers differ much in their appreciation of the remedy. It seems almost certain that it has benefited if not saved many cases of septicæmia, but an accurate knowledge that streptococci are in the blood is indispensable before using this expensive drug.

The amount given in successful cases I find to have varied between 20 cc. and 300 cc.

In the case here recorded it seemed as if recovery was slowly taking place during October and November. Was the anti-toxin given responsible for this, or was the patient manufacturing an antitoxin of her own? If the latter, the fresh outbursts which gave rise to the abscesses from time to time were never successfully combatted, and each attack left her in a worse condition to withstand the succeeding one, notwithstanding the food and stimulants with which she was continually plied. One felt oneself powerless to succeed when the origin of the evil was undiscoverable.

Remarks by Dr. J. Hewetson, with special references to the condition of the blood :—

		Temp.		Pulse.		Resp.		Leucocytes per c.m.
Sep. 13	...	102.2°	...	126	...	26	...	3520
„ 15	...	102°	...	112	...	28	...	7760
„ 18	...	103°	...	116	...	28	...	7760
„ 24	...	104°	...	120	...	30	...	8740
(Abscess forming over sacrum)								
„ 25	...	103°	...	120	...	24	...	7440

Sep. 26.—Abscess opened. Cultivation taken from the pus, and a pure growth of streptococcus pyogenes obtained. Cultivations taken from the blood, and a pure growth of streptococcus pyogenes obtained.

		Temp.		Pulse.		Resp.		Leucocytes per c.m.
Sep. 28	...	103.4°	...	128	...	24	...	8080
(30 cc. of antistreptococcus serum injected during the day.)								
Sep. 29	...	104.6°	...	128	...	28	...	9520

Differential count :—

Polymorphonuclear -	-	-	-	-	91.2 per cent.
Small Lymphocytes	-	-	-	-	5.2 „
Large Lymphocytes	-	-	-	-	3.6 „

(Synovitis of knee. Fluid aspirated. Gave pure growth of streptococci, 10 cc, of serum given.)

A Case of Prolonged Septicæmic Infection. 149

			Temp.		Pulse.		Resp.		Leucocytes per c.m.
Sep. 30	...		104°	...	120	...	28	...	10000
			(20 cc. of serum given.)						
Oct. 1	...		104°	...	156	...	38	...	8940
			(10 cc. of serum given.)						
" 3	...		103·6°	...	132	...	36	...	13120
" 5	...		101°	...	132	...	28	...	12800
" 7	...		101·4°	...	140	...	36	...	18240
" 10	...		101·8°	...	136	...	32	...	20880

Oct 12.—Differential count:—

Polymorphonuclear, finely granular oxyphyles, 90·4 per cent.

Small lymphocytes - - - - - 4 "

Large lymphocytes - - - - - 3·8 "

Transitional cells - - - - - 1 "

Eosinophyles - - - - - ·8 "

Cultivations from blood sterile.

Cultivations from blood stream.								
			Temp.		Pulse.		Resp.	Leucocytes per c.m.
Oct. 12	...	102.2°	...	136	...	22	...	19360
" 15	...	102°	...	132	...	32	...	24000
" 17	...	102.2°	...	132	...	32	...	21840
" 20	...	103.8°	...	158	...	36	...	16240
" 25	...	102.6°	...	138	...	28	...	28720
" 28	...	103°	...	138	...	28	...	29560

Differential count:—

Polymorphonuclear, finely granular oxyphyles, 88·0 per cent.

Small lymphocytes - - - - - 7·2 "

Large lymphocytes - - - - - 3·4 "

Transitional cells - - - - - ·8 "

Mast cells - - - - - ·2 "

Eosinophyles - - - - - ·4 "

Abscess of buttock developed on this day.

Oct. 30. Abscess of buttock opened. Gave pure growth of streptococci.

		Temp.		Pulse.		Resp.		Leucocytes per c.m.
Oct. 31	...	100·2°	...	136	...	28	...	53680

Differential count:—

Polymorphonuclear, finely granular oxyphyles, 90·6 per cent.

Small lymphocytes - - - - 7 „

Large lymphocytes - - - - 1·4 „

Transitional cells - - - - 6 „

Eosinophyles - - - - 4 „

Nov. 4. Knee again opened and thoroughly drained. A pure growth of streptococci obtained. A large abscess was at the same time evacuated from under the right deltoid, and a pure growth obtained from this also.

		Temp.		Pulse.		Resp.		Lecucocytes per c.m.
Nov. 7	...	100°	...	128	...	28	...	27620
„ 11	...	99°	...	120	...	24	...	26560

For quite a considerable time after admission, this case remained a mystery. Many suggestions as to diagnosis were given, but none with any degree of certainty.

The leucocyte counts threw no light whatever upon the case; indeed I regarded them as distinctly weakening the possibility that our patient was suffering from pyæmia. The fallacy of this I learned later. The nature of the case became clear on examining the blood, and injections of antistreptococic serum were then given. Whether it was due to these injections or to a pure coincidence I do not know, but a day or two after the third injection the patient showed a definite leucocytosis for the first time. This leucocytosis was maintained and increased to the end of my observations; and it can be observed, as in other cases of pyæmia in which I have made counts, the same fluctuation, the same ebb and flow, is present in the leucocyte curve.

The patient presented a clinical picture of the most intrinsic interest. At the outset of her hospital career she lay on her bed complaining of nothing but weakness. She was emaciated, feverish, and fretful, her pulse was rapid, her tongue dry and raw, and her skin dry, rough, and covered by fine scales. She was alert, and suspicious of all who came near her. Every

method of examination was exhausted except the very one that proved of so much value. I am surprised now that we did not examine her blood for bacteria earlier in her disease. My low leucocyte count was largely responsible for this delay. I took it for granted that a person who had battled so long, as this case, with some foe of undoubted severity would have formed a definite leucocytosis had it been of a pyæmic nature. It is a matter of intense interest to realise the complete absence of leucocytosis in the early weeks of her disease. It might be that she had become too exhausted by her mammary abscess to offer much reaction to the invasion of a streptococcus, or it might be that she had become gradually used to a steady increasing dose of streptococcic toxin without manifesting any degree of leucocytic response. Soon after her third dose of serum, and about ten days after her first abscess appeared, a definite leucocytosis began. Whether the serum so improved her reactionary qualities or whether there was an increased production of toxin to account for this I do not know.

A very interesting fact is revealed by the differential count made on Oct. 29, for although the count is a normal one, it will be seen that the polynuclear cells are relatively much increased in number. It would be a work of great interest to make careful differential counts of these normal quantitative estimations of leucocytes in pyæmia, to ascertain whether my experience in this case is usual or not. If it is usual it might be a point of considerable diagnostic value. Throughout, this case was purely of a streptococcic nature, and this fact, associated with its slow chronic course, renders it one of peculiar interest.

THE BACTERIOLOGY OF SCARLET FEVER.

BY W. D'ESTE EMERY, M.D.,
LECTURER ON PATHOLOGY AND BACTERIOLOGY IN THE
UNIVERSITY OF BIRMINGHAM.

THERE are perhaps but few diseases the infectivity, clinical history, and subsequent immunity of which stamp them so definitely as of bacterial origin as is the case with scarlatina, and it is not a little remarkable that the pathogenic organism of this infection is still to seek. A partial explanation may be offered: firstly, the primary lesion (the angina) occurs in a region which is so rich in bacterial life that its investigation offers considerable difficulties, and secondly, the lesions which are probably due to the invasion of the internal organs by the specific germ (travelling via the blood-stream) are so like those which occur in ordinary septicæmic processes that we can rarely be quite sure that they are not due to a secondary infection.

The first serious attempt to investigate the problem was made by Klein very early in the history of bacteriology. Klein found a streptococcus in the blood of patients suffering from scarlet fever, and in the internal organs after death. This streptococcus, he was at that time unable to distinguish by cultural methods from the common streptococcus pyogenes, and most authorities thought that they were in reality identical, the streptococcus of scarlet fever being merely an organism causing a secondary septicæmic infection. This view was held by Crooke, Fränkel, Freudenberg, and others. Klein, however, maintained that his streptococcus differed from the streptococcus pyogenes in its pathogenicity for the lower animals, and that the lesions it produced (notably in the kidneys) were so similar to those which occur in human scarlatina as to justify us in regarding them as being due to the same infection.

The question assumed quite a new aspect when the celebrated Hendon outbreak occurred. An epidemic of scarlatina, which raged in Marylebone in 1885, was investigated by Power and traced conclusively to infection from milk supplied from a farm

at Hendon ; and Power failed entirely to find any human source from which the milk might have been infected, but discovered that the cows were suffering from a vesicular disease of the udders. This was a discovery of the utmost importance, as it indicated the possibility that scarlatina might affect the cow and occur in man by infection therefrom. This view has been ably advocated by many writers and is generally accepted in this country. But there is not sufficient evidence to justify us in considering it as proved.

Klein investigated this Hendon disease on bacteriological lines, and found that the secretion from the ulcers left by the rupture of the vesicles on the udders contained streptococci. These were obtained in pure culture and inoculated into calves : they produced a disease associated with lesions of the internal organs which Klein identified with those characteristic of human scarlatina, and also with those which he had produced by the injection into animals of the streptococcus derived from such cases. The whole case seemed clear : scarlatina seemed to be due to a streptococcus which might attack milch cows, pass into the milk, and produce the disease in man.

This view was strongly combatted by Crookshank, who maintained that the disease from which the cows were suffering was *cow-pox* ; that the milk had become infected from a human source ; and that the streptococcus was a mere secondary infection of the vesicles on the udder, and caused ordinary septicæmia when injected into animals. The question was seen to be of so great importance that the subject was reinvestigated on behalf of the Board of Agriculture by Crookshank, Axe, and M'Fadyean. The former investigated an outbreak of bovine disease which occurred in Wiltshire and was apparently identical with the Hendon disease, except in that it was not associated with human scarlatina, and found streptococci, which seemed to be the same as those described by Klein : and proved beyond reasonable doubt that the disease was really cow-pox. Professor Axe found that the cows in which the disease appeared at Hendon came from

Derbyshire, and that others from the same herd had suffered from a vesicular disease of the udders and had not caused human scarlatina. He also found that scarlet fever had occurred in Hendon in 1885, that some of the men who worked on the farm lived in the infected district, and that the relatives of a girl suffering from the disease visited the farm. M'Fadyean failed to infect cows with this vesicular disease with inoculations from human cases of scarlatina.

No further important investigations appear to have been made until 1891, when Kurth found streptococci in the throat, the pus from cervical abscesses, and from the cadaver in some cases of scarlatina. This organism was probably the same as that described by Klein, but he added a new fact of great importance in the recognition of the organism, and gave it a new name. He showed that this streptococcus forms a twisted gelatinous-looking mass when grown in broth, and called it *streptococcus conglomeratus*. Kurth found it in many, but not all, cases of scarlatina, and did not find it in other diseases. His results certainly proved—(1) that this streptococcus is one that can be distinguished from the streptococcus pyogenes by cultural tests, and (2) that it is common in scarlatina and rare in or absent from other diseases.

The investigation of this organism was taken up some years after by Mervyn Gordon, in a most careful and painstaking series of researches, the results of which are published in the reports of the Local Government Board. It will be convenient to deal with them here, though his last report was preceded by those of Baginsky and Sommerfeld and Class. Mervyn Gordon re-investigated the morphology of the streptococcus conglomeratus and of other varieties of streptococcus, and added facts of the utmost importance to our knowledge of this group of bacteria. His papers can hardly be summarised in brief, and the article in the Local Government Board report for 1899-1900 should be read by all who are interested in the more purely bacteriological aspects of the question. Here, however, it may be proper to refer to a fact of great interest—the

occurrence of bacillary forms in pure cultures of the streptococcus conglomeratus. These are found occasionally in other varieties of streptococci, but in the one under discussion they are so constant as to be characteristic: and in some cases the organism might be called a bacillus rather than a coccus. Further, the bacilli have so close a resemblance to those of diphtheria that the possibility of the presence of the Klebs-Löffler bacillus was suggested. This, however, could be excluded: and Mervyn Gordon describes cultural characters by which the two can be differentiated. But the question arises whether these bacillary forms might not occur in the throat in scarlet fever (which does not seem to have been investigated) as well as in cultures, and be responsible for some errors in the bacteriological diagnosis of diphtheria. The streptococci which would accompany them would excite no suspicion as to the true state of affairs.

The evidence as to pathogenicity which the author adduces may be summarised thus. The organism was found in twenty out of twenty-seven examinations of the throat in cases of scarlatina (the exceptions being all in cases examined late in the disease), and was absent from normal throats, from cases of simple tonsillitis, follicular tonsillitis, membranous pharyngitis, and diphtheria: it was found in pure culture in a pleuritic effusion in a case of scarlatina: in the internal organs (often in pure culture) in most, if not all, fatal cases of the disease; and is pathogenic for the lower animals, especially mice. Mervyn Gordon holds, therefore, "that the streptococcus scarlatinæ or conglomeratus is the specialised and essential agent of that specific infection known as scarlatina or scarlet fever."

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RHINOLOGY IN RELATION TO EYE DISEASES.

BY J. JAMESON EVANS, M.B., C.M. EDIN., F.R.C.S. ENG.,
HON. SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

THERE are certain diseases of the orbit and neighbouring nasal sinuses which might be considered the happy hunting ground of both Rhinologists and Ophthalmologists. In virtue of such overlapping, it might be thought that they would have received a degree of attention which would lead to their full elucidation and a complete understanding of their pathology. As a matter of fact such is not the case—possibly because they belong to both, neither cares to take the initiative, and as a ball returned between two partners at tennis, is allowed to pass, each thinking the other will take it, or being afraid to make for it in case his partner does likewise and collides with him—so, the subject of orbito-nasal diseases is perhaps one of the most neglected in rhinology and ophthalmology. This statement is further borne out by the comparative infrequency with which an ophthalmic surgeon uses a laryngoscopic mirror, and the fact that few rhinologists ever attempt to use the ophthalmoscope. This is perhaps a disadvantage which has resulted from the subdivision of the older speciality of “Eye, Ear, Nose and Throat.”

As illustrative examples in support of the above assertion, I will first take the diseases of accessory nasal sinuses—a subject which up to very recent years was somewhat shunned and inadequately explored, and even at the present time the pathology of some is undecided, whilst the treatment of most of them is unsatisfactory.

Of late years, however, rhinologists have taken up the subject most enthusiastically, and at the present time it appears as if they would monopolise the accessory sinuses to the complete exclusion of the ophthalmologists. Whether all cases of sinus disease, especially ethmoidal and frontal sinusitis, should be

dealt with from the nasal side entirely I shall not attempt to decide, but as many such come under the observation of the ophthalmic surgeon it behoves him to be acquainted with all the means of diagnosis of such cases, and if he should consider the case to be in his domain to know how to treat it successfully. Even in centres of specialism one specialist should be able to decide which case is better treated by himself and which should be referred to his colleague in the allied speciality. Perhaps the most common mistake to make is in connection with ethmoidal and lachrymal diseases. I have seen several cases assiduously treated for months as dacryocystitis where the source of the mischief lay entirely in the ethmoidal cells, the lachrymal trouble being entirely secondary. On the other hand, ethmoidal diseases, in consequence of the absence of nasal symptoms, have been referred to the ophthalmic surgeon to have the minor lachrymal complaint attended to, under the impression that the primary source of trouble lay in the lachrymal sac or duct. The oversight is of consequence, apart from the delay in curing the patient, for it may be attended with some danger. Should the bony walls of the ethmoidal cells be absorbed and the walls of the lachrymal sac ruptured or ulcerated, the lachrymal syringe might be introduced into the enlarged cells, whence it would be a comparatively easy matter to force fluids into the orbital tissues, and even through the cribriform plate into the extradural space.

Both frontal and ethmoidal diseases have been mistaken for exostoses in those cases where the bones are distended and the progress slow. The operator is apt to be somewhat disconcerted when he finds no sign of a tumour where he expected to find a defined osseous growth; but if he keeps in mind the possibility of a distended air sinus he will probably be able to relieve his patient and retain his good name, if he clears out the enlarged cells and makes a free opening into the nose.

Diseases of the sphenoidal sinus not infrequently give rise to eye symptoms combined with those related to the nose, and an examination of the field of vision in conjunction with the use

of the ophthalmoscope would often help to elucidate and locate a case of doubtful sphenoidal empyema, or an inflammatory or malignant growth in that region. Ophthalmic surgeons often meet with *amblyopia* of ill-defined origin, and which are put down as "influenzal," "rheumatic," or what not ; but it should be the duty of the ophthalmologists to make sure that they are not due to diseases of neighbouring nasal sinuses, and that the epithet is only used after examination of the nose and the exclusion of the more definite causes. In fact, it would be a wise precaution to examine the nasal cavities and nasopharynx in all cases diagnosed as retrobulbar neuritis or retrobulbar hæmorrhage, and possibly by this means the number of idiopathic retrobulbar diseases would be considerably reduced.

Eye symptoms may also develop in diseases of the antrum of Highmore. Orbital cellulitis is not an infrequent complication of antral disease. Cysts in the floor of the orbit, and it may be, appearing in the lower conjunctival fornix, may be the first indication of a cystic sarcoma of the upper jaw. I have seen such a cyst mistaken for a simple primary conjunctival cyst, but a glance at the nose was sufficient to rectify the diagnosis and to indicate the serious nature of the disease. The frequency with which the conjunctival cul-de-sac becomes infected with various micro-organisms from the nose would be difficult to estimate, but that it is not infrequent I am fully convinced. It is an every day occurrence for children who have had a discharge from the nose for some time, to be brought to the ophthalmic surgeon in consequence of a catarrhal or "strumous" affection of the eye—generally on the same side as the nasal trouble. It is also not uncommon to see the conjunctival and nasal mucous membrane simultaneously affected with tubercular disease. But it is not sufficient simply to diagnose the associated nasal lesion, but it is absolutely essential that it should be treated as thoroughly and as vigorously as the eye condition, so as to prevent constant reinfection of the latter. Inattention to such a very evident detail has often led to a most undesirable prolongation of treatment in an otherwise simple eye case.

Many cases of epiphora present little or no obstruction in the upper portion of the lachrymal passage, but the lower end is occluded either by a bony cartilaginous or membranous obstruction. Donald Gunn has shown* that most of the cases of lachrymal obstruction appearing soon after birth, are due to a congenital abnormality of the lachrymal duct near its nasal orifice, and their nature can best be investigated by passing one probe down the duct and another upwards from the nasal side and noting the amount and nature of the obstruction which intervenes between the two. Other cases of lachrymal obstruction, he points out, are due to tubercular and syphilitic diseases of the nose or of the wall of the lachrymal duct.

* *Ophthalmic Review*, Feb., 1900.

MEDICAL ABSTRACTS.

REPORT ON RENAL AND URINARY DISEASES.

BY PROF. ROBERT SAUNDBY, M.D., LL.D., M.Sc., F.R.C.P.

DIABETES.

Strauss, Jastrowitz, Hirschfeld, Raimann. *Traumatic Diabetes and Alimentary Glycosuria*. — *La Semaine Médicale*, 1901, p. 182.

Strauss states that he has looked for alimentary glycosuria 500 times and has had a positive result in 70. Out of 9 individuals predisposed to diabetes 1 only gave a positive result. The result was positive in 2 out of 20 cases of obesity, in 4 out of 12 of gout, and in 4 out of 24 of Grave's disease. He thinks that traumatism may cause diabetes when an organ which presides over the assimilation of sugar is injured, but that in other cases diabetes only results where a predisposition exists, and that the usual consequence of injury is merely to cause glycosuria.

Jastrowitz also states that he has looked for alimentary glycosuria in a considerable number of persons suspected to be predisposed to diabetes, and has only very rarely obtained a positive result, and so far in none of these persons had true diabetes developed later.

Hirschfeld attributes some importance in the production of the glycosuria which so often follows an accident to the rest in bed, as muscular activity greatly influences the destruction of sugar.

Raimann has studied the occurrence of alimentary glycosuria amongst persons suffering from mental diseases. He has found that the assimilation of sugar is increased in idiocy, mania,

paranoia, epilepsy, and in the benign forms of general paralysis. On the other hand, it is diminished in melancholia, in degenerative psychoses, in secondary and senile dementia, in general paralysis, and in alcoholic delirium. As a rule the assimilation of sugar is increased in psychoses accompanied by excitement and diminished where there is depression.

Orlov, N. *A Case of Diabetes in an Infant.*—*Vratch*, March 3rd, 1901.

The author says that only six cases have been published in nursing infants, and these cases are not certainly diabetes. In his case, the child was five months old and suffering from boils, while the urine contained a considerable quantity of sugar and urine was passed frequently. The child was thirsty and rapidly wasted and soon died. It showed, *post-mortem*, serous diffusion in the brain and œdema of the pia mater; double bronchopneumonia; and acute enteritis. He appears to attribute the glycosuria to the hydrocephalus.

Achard and Loeper. *Glycosuric Inadequacy.*—*Arch. de Med. Exper.*, No. 1, 1901.

Achard and Loeper have carried out an important series of investigations on the subject of transitory glycosuria. They find that in very many cases sugar appears in the urine in different degrees and at different times. These cases constitute a graduated series, having at one end diabetes mellitus, at the other a mere form of glycosuria which is intermittent. This latter may, however, show considerable variation in its severity. It may appear if not present, or if present may be considerably increased by the hypodermic injection of glucose or by the ingestion of this form of sugar or any other substance capable of transformation into glycosuria. On the other hand, considerable amounts of sugar may be injected hypodermically in healthy persons without producing glycosuria. One of the writers failed to find sugar in the urine after injecting 40 grams

of glucose, and they quote Voit as having found only a slight trace of glycosuria after the injection of 60 grams. Under this head, therefore, comes that form of diabetes which may be called hepatic, an insufficiency on the part of the liver to deal with sugar-forming substances. Other morbid states, however, appear to have the power of producing glycosuria. The writers have investigated many cases of rheumatism by injecting doses of glucose varying in amount from 1.5 gram to 3.5 grams. In 19 cases of acute rheumatism glycosuria was present in 3, and was induced by hypodermic injections of glucose in 15. An interesting point is that in two cases of gonorrhoeal rheumatism the same tendency to glycosuria was induced. In a case of erythema with swelling of the joints and a past rheumatic history, slight transitory glycosuria was noticed. A hypodermic injection of glucose in this case caused the glycosuria to reappear. In all these cases there was an accompanying urobilinuria. This, the writers think, is a subjective phenomenon. It does not necessarily follow that transitory glycosuria may not be present without urobilinuria, for such is the case in typhoid. The writers have investigated cases of tonsillitis, lymphangitis, jaundice, and lead colic, in all of which there was glycolytic inadequacy. They have also noticed that towards the end of cases of cancer and tuberculosis a similar condition of things existed.

Lépine, R. *La Lævulose Alimentaire dans ses rapports avec les affections du Foie.*—*La Semaine Médicale*, 1901, No. 14.

After giving a brief summary of the modern observations which have shown that diabetics tolerate moderate doses of lævulose, Lépine points out that the healthy organism assimilates glucose better than lævulose (Voit); but the explanation appears to be furnished by Minkowski, who has shown that after the removal of the pancreas the liver is incapable of forming glycogen from glucose, but can do so from lævulose. Hence the tolerance of the latter sugar which is not assimilated, but transformed and stored up, at least in part. The muscles do

not appear to take part in this power of storing lævulose as glycogen. As the integrity of the liver is indispensable for the assimilation of lævulose, it is indisputable that all diabetics are not equally tolerant of this sugar, for the liver is not always healthy. Where there is liver disease or functional insufficiency of the liver, it may be more easy to produce alimentary glycosuria with lævulose than with glucose. In the case of a woman, aged 53, suffering from intense jaundice of two months' duration, Lépine succeeded in producing glycosuria after the ingestion of a liquid containing 80 grammes of lævulose and 20 grammes of glucose, although a few days later 150 grammes of glucose dissolved in the same amount of fluid produced no glycosuria. It is noteworthy, that in this case no alimentary glycosuria was produced in spite of the profound affection of the liver, a good part of which must have been deprived of its function. In truth, we can no longer regard alimentary glycosuria as a sign of hepatic insufficiency. Lépine suggests that it is possible that the experiments made in France by Hanot and others have been made with saccharose, that is to say, with the mixture of glucose and lævulose, and that in future any test of the sufficiency of the liver to be trustworthy should be made with lævulose only.

Abbott, Maud E. *Pigmentary Cirrhosis in a case of Hemochromatosis.*—*Journal of Pathology and Bacteriology*, December 1st, 1900.

Miss Abbott's case is interesting because, while presenting in all other respects a characteristic example of pigmentary cirrhosis, the urine at no time contained sugar. At the *post-mortem* examination all the organs excepting the kidneys were sclerosed and pigmented. The connective tissue of the liver and pancreas was the seat of pigmentary deposit derived from the coloured cells of these organs. The pancreas was the seat of well-marked chronic inflammation. The author distinguishes two kinds of pigment—one deep brown, and the other light

yellow; both contain iron. The first is called hæmosiderine, and gives readily the reaction of Perl; while the second, called hæmofuscine, must be first treated with hydrochloric acid in heat.

According to Miss Abbott, the increase of connective tissue is due to irritation of pigment set free in consequence of the destruction of the hepatic cells. She attributes the cause to the excessive production of pigment, and draws attention to the fact that in the histories of all the recorded cases there have been hæmorrhages. In the case in question there were frequent attacks of epistaxis. The disease, therefore, appears to pass through the following stages:—

1. Hæmorrhages with destruction of red blood corpuscles.
 2. Appearance of pigment in the hepatic parenchyma.
 3. Disintegration of hepatic cells and passage of the pigment into the connective tissue of the liver.
 4. Resulting chronic inflammation of the connective tissue.
- Where glycosuria is superadded it is due to an excessive degree of change in the liver or pancreas.

Lancereaux. *Lecithine in the Treatment of Pancreatic Diabetes.*—*La Semaine Médicale*, 1901, p. 202.

At a meeting of the Académie de Médecine Lancereaux stated that under the use of lecithine in doses of 40 to 50 centigrammes (6 to 7 grains) not only does the wasting cease, but there is rapid increase of weight and considerable improvement in the general health. Robin pointed out that side by side with its advantages lecithine presented a certain number of drawbacks which should be known, of which the principal was an increased elimination of uric acid. According to Desgrez and Zaky lecithine even injected under the skin or given by the mouth causes very marked increase of weight in dogs and rabbits. The effect upon the urine was to cause an increase of urea and of the total nitrogen with diminution of phosphoric acid.

BRIGHT'S DISEASE.

Kerley. *Hot Water Irrigations of the Bowel in Scarlatinal Nephritis.*—*La Semaine Médicale*, 1901, p. 224.

Kerley recommends irrigations of the colon with hot water as the best means of restoring the functions of the kidney in scarlatinal nephritis. They should be employed whenever the quantity of urine is diminished or when convulsions occur. In a child, aged three, 500 to 750 c.c. of water at a temperature of 43 C. should be introduced by means of a rectal tube passed into the rectum for a distance of 2½ centim. If the water is returned at once it must be repeated and irrigation should be continued every six or eight hours. After three or four administrations the kidneys generally commence to act and abundant diuresis takes place.

Souques. *Fatal Intestinal Hæmorrhage in Bright's Disease.*—*La Semaine Médicale*, 1901, p. 221.

A man, aged 58, who had suffered from slight uræmic troubles in the course of chronic nephritis, died suddenly, and at the autopsy the ileum was filled with blood, but careful examination discovered no trace of ulceration or erosion.

Guillain. *Nephritic Headache treated by Lumbar Puncture.*—*La Semaine Médicale*, 1901, p. 157.

Guillain and Marie report the case of a patient who was attacked in the course of chronic nephritis with a very intense headache, which resisted all treatment. Thinking that the headache might be occasioned by excessive tension of the cerebro-spinal fluid, they performed lumbar puncture and removed 6 c.c. of fluid. In the course of the day the headache completely disappeared. The operation had been performed four days previously, and the headache had not reappeared. In the course of the discussion which followed, M. Le Gendre confirmed the observations, saying that he had seen headache and other troubles, such as insomnia and myosis,

in uræmic patients relieved by the removal of a small quantity of cerebro-spinal fluid. Netter suggested that the small quantity removed did not imply excessive tension, as in children with meningitis 40 or 50 c.c. are often removed; but Guillain replied that the flow had been intentionally arrested after 6 c.c. had been withdrawn.

At a subsequent meeting Babinski reminded the Society that he had made remarks of a similar nature three months before, and that he had emitted the hypothesis that the theory of cerebral œdema in uræmia is partially true, and that it would be worth while to experiment by puncturing the spinal canal in cases of uræmia with cerebral symptoms.

Le Noir, Merklen, and Méry. *Intermittent Albuminuria*.—*La Semaine Médicale*, 1901, p. 246.

At a meeting of the Société Médicale des Hôpitaux, Le Noir related particulars of twenty-four cases of intermittent or rather orthostatic albuminuria, for in most of the patients the horizontal position caused it to disappear. The ages varied from ten to thirty years, and all the patients were thin, dyspeptic, and presented slight dilatation of the stomach with congestion of the liver and lowered arterial tension. In none of them was there any sign of nephritis apart from the albuminuria, and all recovered without complications. In one case pregnancy developed normally and even appeared to interrupt the albuminuria. These cases belong therefore to a special clinical type of intermittent or functional albuminuria. Intermittence by itself does not prove the benignity of the condition, and a favourable prognosis must be based upon the whole of the clinical signs. Merklen pointed out that orthostatic functional albuminuria differs from orthostatic nephritic albuminuria by the fact that the former always presents vascular or vasomotor atony. Méry related a case of albuminuria in a man following mumps, in which there was diminution of the permeability of the kidney to methylene blue. Merklen added that in all

cases of functional orthostatic albuminuria the permeability of the kidney remains normal, but was diminished in a case of orthostatic albuminuria following scarlatinal nephritis.

Deyl. *The Differentiation of the Optic Neuritis of Bright's Disease from that of Cerebral Tumour.* *La Semaine Médicale*, 1901, p. 247.

According to a communication made by the author to the Third Congress of Physicians and Naturalists held recently at Prague, when optic neuritis depends upon cerebral tumour arterial pulsation in the papilla becomes manifest when the globe is compressed. If this phenomenon is absent, the neuritis is due to Bright's Disease. The absence of pulsation in the latter affection is explained by the sclerosis of the walls of the papillary and retinal arteries. If subsequent observations confirm the value of this sign, it will be of great practical interest on account of the frequency with which many of the symptoms of cerebral tumour, such as headache, vomiting, and convulsions, are observed in the course of chronic interstitial nephritis.

URINE.

Pagniez. *Hæmoglobinuria Caused by Hæmolytic Urine.*—*La Semaine Médicale*, May 1st, 1901, p. 148.

At a meeting of the Société Médicale des Hôpitaux, M. Pagniez related a case of a patient who had an attack of hæmoglobinuria in the course of chronic nephritis, but he explained the occurrence by stating that the urine was capable of destroying the red blood corpuscles, not only of the patient himself, but of other normal individuals, so that the corpuscles were no doubt destroyed in the urinary passages, and the hæmoglobinuria was due to the hæmolytic properties of urine. It may be stated here that urine is always hæmolytic, but that it takes some time to destroy the corpuscles. It is, therefore, always of importance in the diagnosis of hæmoglobinuria to examine a specimen of urine which has been freshly passed.

Langdon Brown. *Hæmaturia following the Administration of Urotropin.*—*British Medical Journal*, 1901, Vol. I., p. 1472.
A. Griffith, W. A. Milligan, and T. J. L. Forbes, *Ibid.*, p. 1617.

The use of urotropin in enteric fever in doses of 30 grains daily, has been urged in order to prevent the spread of infection to others through the urine. Langdon Brown records two cases of enteric fever treated with 10 grains of urotropin three times a day where hæmaturia followed after seven or eight days' use of the remedy and ceased when it was discontinued. There are no notes as to the microscopic appearances of the urine, but the author regarded the bladder as the source of the hæmorrhage. In both cases some pain and difficulty in micturition preceded the hæmaturia, and should be regarded as a danger signal. Mogli has reported increased pain and slight hæmaturia in cases of cystitis where the drug was used in much larger doses (90 grains daily). Griffith reports a case of albuminuria occurring the tenth day after taking 10 grains of urotropin three times a day. The drug at once caused slight urinary pain which was not reported. Milligan adds a case of hæmaturia following uncomfortable irritation after seven days' use of 5 grains of urotropin three times a day. Forbes gave 10 grains of urotropin thrice daily in half a pint of warm water to a man, aged 62, suffering from cystitis and enlarged prostate, who after three days began to suffer from pain and hæmaturia which stopped when the medicine was discontinued. He was afterwards put upon 5 grains of the drug thrice daily which caused a return of the burning and blood, so that it had again to be stopped. In all these cases the discontinuance of the drug was followed by disappearance of the symptoms.

Chauffard and Gouraud. *The Clinical Value of Haycraft's Reaction (so called) for the Demonstration of Bile Principles in the Urine.*—*Journ. de Physiol. et de Pathol. gén.*, May, 1901.

The method here advocated is really that originally proposed by Hay (not by Haycraft) and depends upon the modification

of surface tension in the liquid when a few grains of sublimed sulphur are sprinkled on the surface of the urine, which sink when bile acids are present, or float in the contrary condition. Chauffard and Gouraud have tested this method with different solutions, both aqueous and urinary, of glycocholate of soda, and they have satisfied themselves that the reaction gives a positive result with a solution of a twenty thousandth part in distilled water or even with a forty or fifty thousandth part in urine, and they believe it is capable of being employed to distinguish between bile salts and pigment. Clinical experiments were equally conclusive, as the reaction was not only positive in seven cases of jaundice of different kinds, but also in the urine of twenty out of fifty persons taken at hazard, and in these twenty patients the spectroscope and Salkowski's procedure showed small quantities of biliary pigment to be present. They regard the reaction as very much more successful than the methods of Gmelin or Pettenkofer, and as exact as that of Salkowski, although much more simple than the last. The only precautions necessary are to use fresh urine, or if it must be kept to add a solution of cyanide of mercury, which while exercising considerable antiseptic power has no effect upon the precipitation of sulphur. In addition the reaction must be considered as over at the end of five minutes, as the fall of the sulphur after this period has no value. Finally, the method should not be used in patients who are taking certain drugs such as phenol and chloroform.

Kalisher. *A Case of Albumosuria.*—*Deut. Med. Woch.*, v. xxvii., p. 54, 1901.

Kalischer records another case of this disease associated with myelomata of the ribs, and similar to those already reported by other authors. The patient, a woman aged 67, first complained of pains over the lower part of the thorax, which were aggravated by movement. The diagnosis in the early stages was quite obscure. After the symptoms had been present for a

year the woman was seen by Kalischer. He discovered various points of maximum tenderness, especially marked at the junction of the fifth, sixth, seventh, and eighth left ribs with their cartilages. Later various irregularities appeared in the rib outlines, prominences and depressions, with softness and bending at certain points. The sternum, clavicles, and scapulæ also exhibited soft and tender areas. Pain was severe on the slightest movement of the arms, on taking a deep breath, or on the exertion of speaking loudly. Death occurred from general weakness a year and a half after the first onset of the disease. Albumose was found in the urine when first examined by Kalischer, and continued present constantly until death; occasionally albumen was also found. On heating the urine a copious precipitate appeared, which dissolved entirely on boiling and reappeared on cooling. Nitric acid in the cold gave a precipitate which dissolved with heat, and also reappeared on cooling. At the necropsy the ribs were found soft and friable, and easily cut with scissors. The bony substance had almost entirely disappeared, and its place was occupied by a brownish-red diffuent material. Microscopical examination of this material showed it to consist for the most part of white corpuscles, without any appearance of regular "tumour" growth. The condition was, therefore, one of lymphoid myeloma.

ANEURYSM.

BY JAMES W. RUSSELL, M.A., M.D., M.R.C.P.,

Tracheal Diastolic Shock in the Diagnosis of Aortic Aneurysm. By J. N. Hall, M.D. (*The American Journal of the Medical Sciences*, Jan., 1900).

Dr. Hall first reviews the literature of tracheal tugging, and points out that those writers who claim that they have observed this sign in a considerable proportion of patients free from aortic aneurysm have probably been misled by the downward pulsation which is by no means uncommon in more or less healthy people. He insists that the tug is "a distinct and forcible downward pull," and not a pulsation. Toulmin (*Journal of the American Medical Association*, 1897) mentions that in certain cases a genuine tugging may be felt during inspiration only. Dr. Hall confirms this statement, and is of opinion that no importance is to be attached to the phenomenon. He quotes with approval Toulmin's conclusions:—(1) That an up-and-down movement of the trachea occurs in many healthy individuals, and accompanies other diseases than aneurysm. (2) That in such cases the movement is much affected by respiration, in the majority being present during inspiration only. (3) That in a very small percentage of cases distinct tugging of the trachea may be present without involvement of the aorta either by aneurysm or simple dilatation. The tug is not observed in cases of aneurysm of the ascending aorta. Fraenkel has reported one exception to this rule, but the occurrence was explained *post mortem* by the presence of firm adhesions between the sac and the trachea. A few cases of oesophageal tumour have, however been recorded in which tugging, not affected by respiration, has been noticed. Tracheal tugging cannot, therefore, be accepted as absolutely pathognomonic of aneurysm of the transverse arch.

Dr. Hall believes that a more reliable sign is to be found in "the transmission of the diastolic shock, originating at the time of the closure of the aortic valves, through the aneurysm to the

trachea, and manifested by a distinct sharp impulse following the tracheal tug at the same interval as that between the apex-beat and the closure of the aortic segments." This diastolic shock, felt through the thorax, has previously been described in cases in which the aneurysm has reached the chest wall, but its transmission through the trachea, felt at the same time and by the same process as the tracheal tug, is a new phenomenon.

Four cases are briefly described. In the first all the signs of aneurysm of the transverse part of the arch were present, namely, dilatation of the left pupil, paralysis of the left vocal cord, brassy cough, aphonia, pain, diminution of respiratory sounds in the left lung from pressure on the left bronchus, repeated hæmoptysis, delay and weakening of the left radial pulse, pulsating tumour, the presence of which was verified by the fluorescent screen, dysphagia and tracheal tugging. The diastolic shock was extremely distinct. The patient was lost sight of whilst in comparatively good health. In the second, in which an autopsy confirmed the diagnosis, the diastolic shock was only felt in the external tumour during the last two weeks of life, although distinctly felt in the trachea from the time of the first examination. In the third case, verified by autopsy, no shock was felt over the pulsating area, whilst it was very obvious in the larynx. The fourth case is especially interesting from the fact that the signs were consistent with the presence of a solid tumour, except for the presence of the diastolic shock. The diagnosis of aneurysm was again confirmed *post-mortem*. A case of œsophageal cancer is also mentioned in which no tracheal signs were present during life, although the tumour was in intimate connection with the blood vessels and trachea.

Dr. Hall has since examined a large number of non-aneurysmal patients with various diseases without finding one in whom there was any marked tracheal tugging or even a suspicion of the diastolic shock. In two cases of advanced phthisis there was a moderate impulse to be felt at the cricoid cartilage with the cardiac systole, and in several patients a

slight impulse existed, especially during inspiration : but in none was there a distinct downward tug.

A Remarkable Case of Probable Thoracic Aneurysm presenting intermittently through the sternum. By Richard C. Cabot, M.D. (*The American Journal of the Medical Sciences*, April, 1900.)

In June, 1898, a woman, 42 years of age, presented herself at the Massachusetts General Hospital complaining of aneurysm. Over the manubrium was a pulsating tumour the size of a lemon, greenish-black at the tip, with a red areola around the black. A systolic murmur could be heard over the tumour. A few days later the tumour broke, but only puriform matter escaped. The patient stated that it first made its appearance seven years previously, and was then recognised as aneurysmal in nature. She declared that it had come and gone several times, being more noticeable during periods of hard work. A second pulsating mass, larger, flatter, and less inflamed than the other, was felt in the median line at the level of the third and fourth costal cartilages. This swelling was opened surgically eleven days after admission, and a small quantity of blood-stained puriform matter was again let out. The patient improved rapidly and was discharged, attending subsequently as an out-patient. A month after her first appearance there was no prominence at the site of either tumour. One inch below the sternal notch in the median line was the opening of a small sinus, through which a probe passed for nearly three inches, apparently through the sternum. During the night of September 15th, whilst out of bed, her husband heard the sound of a gush and a cry, and found the patient dead on the floor, with a stream of blood issuing from the chest. There was no autopsy. Dr. Cabot suggests that at times the clot inside the sac was sufficiently firm to prevent the blood from forcing its way out through the perforated sternum, while at other times the blood would ooze through it and clot outside the sternum. The diagnosis of aneurysm was confirmed by radiographs showing a tumour in the region of the aortic arch.

The Hæmostatic Use of Gelatin: with report of a case of Hæmophilia treated by gelatin, with recovery. By J. B. Nichols, M.D. (*The Medical News*, Dec. 2nd, 1899).

Lancereaux. *Académie de Médecine*, 11 Oct., 1898. (*Le Progrès Médical*, 15 Oct., 1898).

Lancereaux. *Académie de Médecine*, 29 Mai, 1900, et 10 Juillet, 1900. (*Le Progrès Médical*, 9 Juin et 21 Juillet, 1900.)

Huchard, H. *Académie de Médecine*, 11 Oct., 1898. (*Le Progrès Médical*, 15 Oct., 1898).

De Castro y Latorre. *Revista de Med. y cir. pract.*, no. 593 et 594. (*Le Progrès Médical*, 10 Février, 1900).

A Case of Aortic Aneurysm treated by hypodermic injections of gelatine. By Arthur Cutfield, B.A. Cantab, M.R.C.S. (*British Medical Journal*, Nov. 24th, 1900).

* Beck, Carl. (*New York Medical Journal*, April 15th, 1899).

* Fitcher. *Bulletin of the Johns Hopkins Hospital*, May, 1899.

Anévrisme de l'Aorte Ascendante. Par le Dr. Edouard Boinet. (*Revue de Médecine*, 1898).

Laborde. *Académie de Médecine*, 15 Nov., 1898. (*Le Progrès Médical*, 19 Nov., 1898).

The use of hypodermic injection of gelatine for the cure of aortic aneurysm was first advocated by Lancereaux in conjunction with Paulesco. Many other observations have since been published, of which the following may be briefly described :—

Speaking at the Academy of Medicine of Paris on Oct. 11th, 1898, Lancereaux reported five cases in which success had resulted, as shown by hardening, decrease in size and cessation of pulsation in the tumour. He also recorded two cases of fusiform dilatation of the aorta in which the treatment had completely failed, and came to the conclusion that it was not suited to this condition. He recommended the use of a solution of 2 grammes of gelatine in 100 grammes of normal

* These papers are quoted from the article by Dr. Nichols.

saline solution, 250 cc. being injected under the skin of the thigh at each sitting. The injections should be repeated at intervals varying from 2 to 10 or 15 days; 10, 15 or 20 injections being generally sufficient for a cure. It is hardly necessary to say that a sterilised solution must be used, and that strict aseptic precautions must be adopted. On May 29th, 1900, Lancereaux exhibited a patient before the Academy in whom the treatment had been successful in greatly ameliorating the condition. The case was one of aneurysm of the transverse part of the arch. The tumour had hardened under the injections and diminished somewhat in size, and the patient had gained 10 kilogrammes in weight. The same observer also showed a specimen before the Academy of Medicine on July 10th, 1900, in which firm clots had been formed; and he quoted another favourable case.

Huchard recorded a successful case before the Academy of Medicine, Oct. 11th, 1898. The treatment had lasted 1½ month.

M. de Castro records four cases of aneurysm treated by injections of gelatine. (1) A large aneurysm of the arch of the aorta in a man, greatly improved. (2) Aneurysm of the carotid in a young girl, cured. (3) Aneurysm of the axillary artery, cured. (4) Aneurysm of the innominate artery, greatly relieved. Extremely slow and gradual treatment is, according to this writer, the condition of success. Not only must the length of the intervals, the size of the dose (always small) and the degree of concentration of the solution vary with each individual case, but in the same case according to the circumstances at the time of the injection and the result already achieved.

Mr. Cutfield describes the case of a man, aged 50, with pulsation both seen and felt in the second right space near to the sternum, and other signs of aneurysm. A 2 per cent. solution of gelatine was injected into the abdominal subcutaneous tissues, 3 fluid ounces being injected on the first three occasions and 4 ounces at subsequent sittings. The injections were given every second day for the first three weeks,

and afterwards every third or fourth day. The treatment lasted from July 22nd to September 14th. Improvement began at the end of the first fortnight; then the pain steadily diminished, and pulsation was only felt on deep pressure. Iodide of potassium was also given in 5-grain doses, and food and drink were restricted.

Beck, of New York, reported much improvement in a very large aneurysm of the aorta.

Fletcher treated four cases of aneurysm, three of the thoracic aorta, one abdominal, at the Johns Hopkins Hospital. One case improved, no result was observed in two, and death occurred in the fourth in the course of the treatment.

On the other hand, the proceeding is not without danger, as might be expected. Laborde, speaking at the Academy of Medicine on November 15th, 1898, urged the danger of producing coagulation at a distance from the seat of the aneurysm, and contended that it was an unsafe method unless the gelatine could be injected directly into the sac of the aneurysm. Dr. Nichols quotes a case recorded by Barth. The patient was a woman with an aneurysm of the arch of the aorta. About thirteen injections were given, the last of which consisted of 30 c.c. of a 2 per cent. solution of gelatine. Some days afterwards the patient was suddenly seized with dyspnoea, syncope, and cyanosis, and died in a state of collapse. *Post-mortem*, the sac was found filled with clots, which also extended into the left carotid artery.

Finally, Boinet describes the case of a man, aged 38, with an aneurysm of the ascending aorta. Signs of compression of the lung were noted, but there were no night sweats and no hæmoptysis, and the patient was well nourished and in good condition. Iodide of potassium produced no improvement, and in the beginning of September injections of gelatine were commenced and repeated several times. They were extremely painful, and no benefit was observed, and Professor Boinet came to the conclusion that there was no clotting in the upper part of the sac of the aneurysm. He found signs, however,

which led him to believe that clots had formed in the lower part, compressing and narrowing the pulmonary artery, as shown by a doubling of the second pulmonary sound and a systolic bruit. Towards the end of October the dyspnœa increased, there was slight hæmoptysis, and tubercle of the lung was diagnosed. On February 1st the patient suddenly died of syncope. *Post-mortem*, recent tubercle was found in the right lung, and the superior vena cava and the innominate veins were found to be compressed by the aneurysm. The aneurysmal sac was divided into two parts. The first and most superficial part was free from clots, but the deeper section contained numerous firm clots. The latter compressed and narrowed the pulmonary artery. Professor Boinet is of opinion that this constriction had interfered with the blood supply to the lungs and had been responsible for the outbreak of tubercle. The explanation does not however, seem to be conclusive.

It thus appears that hypodermic injections or gelatine have been instrumental in producing coagulation in the sac of a certain number of aneurysms, cure having taken place in a few cases and improvement in many. The treatment is certainly somewhat heroic, and by no means free from danger, but the fatal nature of the complaint if left to itself may perhaps justify the proceeding. We should certainly be inclined to give it a trial in cases in which there is a well-marked projection through the chest wall, and in which it is therefore possible to inject the solution directly into the sac of the aneurysm, but its adoption in cases in which this procedure is impossible will probably be always a matter of danger.

Aneurysm at the Bifurcation of the Abdominal Aorta. By J. R. Currie, M.B., Ch.B., B.A. (*Glasgow Medical Journal*, February, 1900.)

Dr. Currie describes the case of a man, aged 47, who was admitted into the Glasgow Royal Infirmary for pain in the urethra on micturition and hæmaturia of four days' duration,

Seven months previously he had begun to suffer from pains in the back, becoming more and more constant. Four months later there was an attack of pain in the back accompanied by diminished and high-coloured urine. One month before admission he suffered from pain in the sacral region shooting down the left thigh, followed by cramps in the right leg. On March 30th, four days before admission, at 1 p.m., he felt a sudden flushing of the face and head, followed by a feeling of chill and copious sweating. At 2 p.m. he noticed the appearance of blood in the urine during micturition; and at 10 p.m. he "passed pure blood." At the same time he first became aware of pulsation in the abdomen. On April 1st he complained of pain and frequency of micturition, the pain occurring only during the act and ceasing a few seconds after its completion: it began above the pubis and extended along the course of the urethra to the meatus. On April 3rd he was seized with faintness, and was brought to the Infirmary. On examination part of the umbilical region was occupied by an area of pulsation situated more below the umbilicus than to its left or above it. The superficial abdominal veins were enlarged. The urine contained blood, but no casts were found. On April 6th death occurred from syncope. *Post-mortem* aneurysm was found at the bifurcation of the aorta. The heart was large and fatty, the thoracic aorta atheromatous, and the kidneys intensely congested.

The main interest of the case centres in the renal attacks. Dr. Currie rejects the idea that these were the result of cardiac failure, as no other signs of this condition were present. He considers that they must be attributed directly to the aneurysm, and that they might have been due either to reflex stimulation of the renal ganglia by pressure on the aortic plexus, or to stimulation of the renal plexus by way of the bladder wall. He is of opinion that there was periodical pressure on the inferior vena cava and common iliac veins. Hence would arise congestion of the internal iliac veins and passive congestion of the vesico-prostatic plexus and of the veins draining the peri-

urethral tissues. This would account for the pain, hæmaturia, and scanty urine. Death was probably due to failure of the degenerated cardiac muscle.

Aneurysm of the Coronary Artery: a Report of Two Cases.
By Joseph A. Capps, A.M., M.D. (*The American Journal of the Medical Sciences*, September, 1899).

After describing two specimens of aneurysm of the coronary arteries, Dr. Capps gives a table of nineteen cases of this condition compiled from medical literature. Both left and right coronary arteries were involved an equal number of times. The usual site of the dilatation was very near the origin from the aorta, in the loose cellular tissue described by Vestberg as the periaortic space. Males were much more frequently affected than females. Age had comparatively little influence in the etiology, considering its role as a predisposing cause of aneurysm elsewhere; more cases were under forty than over that age. In two cases it occurred in very young children. Occupation was not an important factor, only two patients being engaged in heavy work. Two gave a history of rheumatism and excessive drinking. The diagnosis was never made during life, since, unless rupture took place, the aneurysm gave rise to no adventitious sounds, and its location over the auricle did not increase the area of cardiac dulness. It is doubtful if unruptured uncomplicated coronary aneurysm has any characteristic symptoms. In two cases dyspnœa, cough and transient pains over the heart were present, but could be better attributed to co-existing bronchitis and valvular insufficiency. The disease usually terminated in death from rupture of the aneurysm into the pericardium, eleven of the patients dying from this cause. In the others the aneurysm was apparently benign, and was accidentally discovered at the autopsy.

The Extension of Aortic Aneurysms into and between the Walls of the Heart, and Dissecting Aneurysms of the Heart.

By Ludvig Hektoen, M.D. (*The American Journal of the Medical Sciences*, July, 1901).

Dr. Hektoen studies the relation to the heart of aneurysms in the beginning of the aorta. He points out that interparietal and intraparietal extension may occur, and many so-called dissecting aneurysms of the heart take their origin in the beginning of the aorta. Genuine dissecting aneurysms of the heart are not common, because the force that tends to cause the separation of the layers of muscle occurs during systole when they are firmly pressed together.

There are, however, a number of places where and methods whereby dissecting cardiac aneurysms may be formed by separation of layers normally more or less adherent to one another. The aneurysm need not originate primarily in the cardiac cavity whose walls contain it; it may come from other cavities or from the aorta. The sinus of Valsalva may give origin to dissecting aneurysms which extend into the walls of the heart. Aneurysms in the beginning of the aorta may extend into the heart, and on the rupture of the original sac, secondary cardiac dissecting aneurysms may develop. Again, dissecting aneurysms of the heart may be secondary to myocardial abscess, though in this condition the dissection may be partly or wholly affected by the suppuration, in which case the aneurysm is not truly dissecting.

Vestberg divides dissecting cardiac aneurysm into interparietal, septal, parietal, and valvular, the first being by far the most frequent. It occurs in the loose tissue under the epicardium around the root of the aorta. Vestberg describes this periaortic space as being bounded externally by the anterior walls of the auricles and the conus arteriosus dexter; internally or centrally by the aorta, the root of the aorta, and the more or less incomplete conus arteriosus sinister. The roof of the space is formed by the epicardium, passing from the posterior surface of the aorta to the anterior surface of the auricles. It will be seen that this space really belongs to the heart, and that aneurysms occupying the space must be regarded as cardiac,

provided they do not possess independent walls from other sources. Ruptures may occur into the periaortic space from the conus arteriosus sinister, the sinuses of Valsalva, the lower part of the aorta, and probably from the coronary arteries. Vestberg describes a dissecting aneurysm of the periaortic space following rupture due to endocarditis of its internal wall, between the base of the anterior mitral valve and the aortic valves. Endocarditis, abscess, sclerosis, and other changes in the beginning of the aorta and the aortic sinuses, traumatic ruptures, and the secondary rupture of aortic aneurysms, may lead to dissecting aneurysms in this space. At first there may be no distinct wall, but in chronic cases a membrane may form. From the periaortic space the dissection may extend into the interventricular and interauricular septa, the interparietal aneurysm thus becoming septal. Occasionally it becomes parietal. Secondary ruptures into the pericardium, especially at the orifices of the space—the exits of the coronary arteries—as well as into the right heart, may take place. Dr. Hektoen concludes by describing several specimens illustrating the varieties of dissecting aneurysm, and also discusses the relation of syphilis to the formation of aneurysm.

REVIEWS.

GLASGOW HOSPITAL REPORTS.*

THE third volume of the Glasgow Hospital Reports contains twenty-two papers, many of which are of more than ordinary interest. Most are on medical subjects, obstetrics, gynæcology and surgery furnishing an equal number of the remainder. The

* Glasgow Hospital Reports. Edited for the Committee by George S. Middleton. M.A., M.D., F.F.P.S.G., Henry Rutherford, M.A., M.B., C.M., F.F.P.S.G., and Walter K. Hunter, M.D., B.Sc. Vol. III. Glasgow : James Maclehose and Sons. 1901.

volume opens with a short account by Dr. John H. Teacher of the overhauling and re-cataloguing of the anatomical and pathological preparations presented to the museum by William Hunter.

In the gynæcological section, Dr. Murdoch Cameron describes the various modifications of the operation of Cæsarian section, and records an additional five successful cases of his own. A very important statistical study of the cases treated in the out-door and in door departments of the Glasgow Maternity Hospital during the last thirty years is contributed by Dr. Robert Jardine. The tables with their analysis represent a very large amount of work, and many most interesting conclusions are to be drawn from them. Not the least of these is the very remarkable drop in the mortality during the last of the three decades dealt with. Another equally important paper is written by Dr. J. M. Munro Kerr, who analyses the eighty cases of eclampsia which have occurred in the practice of the same hospital during the last fifteen years. Such papers as these are invaluable, and should more frequently be met with in Hospital reports. They necessitate a very large amount of work, however, and do not always meet with due acknowledgment. Dr. John Edgar contributes notes of three cases of chronic inversion of the uterus, and Dr. A. Louise M'Ilroy deals with the pathology and differential diagnosis of tubal gestation as illustrated by the record of twenty-two cases.

The first of the medical papers is by Dr. James Adam, who writes on the nature and treatment of asthma. He records a careful study of 25 cases, and arrives at a series of conclusions the chief of which are as follows:—There are two factors in asthma, namely, a lesion in the respiratory tract, most usually in the nose, and a toxic condition of the blood. Sometimes one, sometimes the other of these factors is the more prominent, but unless both are present there is no asthma. Excess of uric acid has a direct connection with the attacks, and the "convulsive" toxin normally present in

the urine and blood is probably also in excess. Dr. Adam advocates the application of cocaine and suprarenal extract to the nose in all cases in which there is any injection of the nasal mucous membrane.

Dr. John G. Gray follows with a paper on a number of cases of albuminuria and nephritis occurring in connection with scarlet fever complicated with varicella. He arrives at the conclusion that under these conditions kidney lesion is much more likely to arise than in cases of uncomplicated scarlet fever, and that if already present following an attack of the latter disease albuminuria and nephritis are likely to be greatly aggravated by the onset of varicella.

Certain other papers call for special mention. Dr. Marion J. Ross records an investigation into the sensory phenomena observed in 27 cases of hemiplegia, in 24 of which the lesion was presumably in the internal capsule, the cortex being affected in the remaining three. The investigation is an important one and is worthy of careful study. Broadly speaking its main result is to show a much greater frequency of sensory symptoms in capsule lesions than is usually thought to be the case. Another statistical paper is written by Dr. John Lindsay Steven, who has collected and studied a series of 120 fatal cases of pneumonia subjected to *post-mortem* examination. Finally Dr. Alfred Webster publishes a very important paper on cardiac arrhythmia in relation to cerebral anæmia and epileptiform crises, containing a number of sphygmographic tracings.

In the section of surgery, Dr. Ernest Maylard appeals to his hospital experience to show the inadvisability of treating tubercular diseases in the surgical wards of a city general hospital. Dr. Leslie Buchanan describes three cases of traumatic ocular paralysis, and Dr. Jas. H. Nicholl discusses the operative treatment of mammary carcinoma, and records a case in which portions of the axillary artery and vein were removed with adherent carcinomatous glands. These papers are short, but Dr. David Newman contributes a more important paper on the septic diseases of the

kidney, with notes of three cases. Two other short papers are written, by Dr. A. Maitland Ramsay on penetrating wounds of the eye, complicated by the presence of a foreign body in the eyeball, and Dr. Henry Rutherford on a case of post-rectal dermoid removed by the parasacral route, with remarks on tumours of the sacro-coccygeal region. Finally, Drs. Lewis R. Sutherland and Henry Eddington describe a second series of specimens illustrating congenital affections of the urinary apparatus.

The editors are to be congratulated on having collected a series of papers of much interest. The whole volume is, we think, an excellent illustration of what hospital reports ought to be.

A MANUAL OF MEDICINE.*

THE third volume of Dr. Allchin's *Manual of Medicine* presents an extremely satisfactory account of the diseases of the nervous system. Indeed, we are inclined to think that this volume will rank as the best of the shorter books on the subject, for we know of none which in a comparatively small scope represents so well the modern science of neurology.

The book opens with an admirable introduction by Professor Sherrington on the physiology of the nervous system. This deals with the functions and arrangement of the various parts of the brain and spinal cord, and is supplemented by a short account of the different neuron systems written by Dr. Aldren Turner. The latter author is responsible for nearly the whole of the diseases of the brain, and he is to be congratulated on his share of the work. We may especially single out the account of the focal symptoms of cerebral disease, given under the head of cerebral tumour, as a model of clear and accurate

* *A Manual of Medicine*. Edited by W. H. Allchin, M.D. Lond., F.R.C.P., F.R.S. Ed., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital. Vol. III. Diseases of the Nervous System. London: Macmillan and Co. Limited, 1901.

description. Dr. J. S. Collier brings this section of the book to a close with his article on aphasia and the other defects of speech. In this he follows the lines of Dr. Bastian's work, and adopts in the main the views of that writer. Thus, he ascribes to the auditory word centre the full responsibility for the processes of silent thought, except that there is also stated to be a simultaneous revival in the visual word centre. We should prefer to leave out the latter, which, we think, plays as a rule no part in the function of silent thought, and to give some prominence to the recall of the motor processes of speech, as advocated by Dr. Wyllie and other authorities. The point, however, is an old source of contention.

The section on diseases of the spinal cord is mainly from the pen of Dr. J. A. Ormerod. It opens with a good description of the main morbid changes and the general symptomatology of cord diseases. The accounts of the various individual morbid conditions are on the whole good, though we think that some might with advantage have been a little more fully entered into. Dr. Purves Stewart contributes the description of the diseases of the cauda equina and of acute ascending paralysis. In this section must also be noticed the elaborate and very valuable table of spinal localisation drawn up by Professor Sherrington.

The chapter on the diseases of the cranial and peripheral nerves is written by Dr. Purves Stewart, and gives a very satisfactory account of its subject. It is followed by another on the functional diseases by Drs. W. S. Colman and J. S. Collier; the article on headache being, however, contributed by the Editor of the Manual. In this chapter some of the best articles in the book are to be found. Dr. Allchin also writes on the trophoneuroses, including Raynaud's disease and erythromelalgia. The book ends with two excellent articles on medical ophthalmology, by Dr. James Taylor and the medical application of electricity, by Dr. Bertram Abrahams.

ATLAS OF THE NERVOUS SYSTEM.*

THE translator of this "Atlas" remarks that he knows of no work in which so much is compressed within so small a space. But compression is not always a virtue, and the book has a much higher claim to praise than this. Not only is it unique in the admirable series of plates which it contains, but much of the letter-press of the later part is written from a standpoint which is to be found in no other text-book. If only as regards the admirable account of the localisation of symptoms and the inferences that are to be drawn therefrom, and the equally admirable system of nervous examination which it describes, the book would stand alone. It is emphatically in these respects the book which is needed by students who are endeavouring to overcome the difficulties involved in nervous clinical work. The smallness of its price moreover places it well within the means of the medical student.

The first part of the book contains 84 plates illustrating the anatomy of the nervous system from start to finish, and the pathological changes which occur in its various diseases. For these plates alone the work is an invaluable addition to the library of nervous disease.

The second part is devoted to a verbal description of the morphology and anatomy of the nervous system, to the general pathology and treatment of its diseases, and finally to a brief account of the pathology and treatment of special diseases. Here occurs that detailed and systematic account of the examination of nervous cases to which we have already referred, and which constitutes, in our opinion, a most important section of the work.

Certain parts of the letter-press are, we think, open to criticism as omitting reference to some of the more recent work done in neurology. Thus, for example, we find that the view

* Atlas of the Nervous System, including an Epitome of the Anatomy, Pathology, and Treatment. By Dr. Christfried Jacob. With a Preface by Prof. Dr. Ad. V. Strumpell. Authorised Translation from the Second Revised German Edition. Edited by Edward D. Fisher, M.D. Philadelphia and London: W. B. Saunders and Company, 1901.

as to the passage of the sensory fibres in the posterior third of the posterior limb of the internal capsule is given as a matter of certainty; the varieties of the sensory symptoms produced by a unilateral lesion in the spinal cord are barely alluded to; and the old view of the inhibition of the reflexes through the motor tracts is still adhered to. Such points, however, are far from numerous, and on the whole the work is thoroughly up to date. We cannot too strongly recommend it to those who are interested in the study and teaching of neurology.

TYPHOID THE DESTROYER OF ARMIES,
AND ITS ABOLITION.*

DR. CANNEY'S pamphlet deserves to be widely read. Whether the actual scheme which he proposes be practicable or not we do not feel competent to decide, but beyond all question the writer is doing a great public service in again calling attention to the appalling and unnecessary loss of life due to water-borne disease in time of war. It is nothing short of amazing that it should be necessary to attempt to arouse the public once more to the fearful mortality which has occurred from typhoid fever in the South African war. Yet there seems every probability that the matter is to be again allowed to lapse, until another campaign shall again demonstrate the perfectly well-known fact that the deaths from bacterial disease far outnumber those due to wounds.

Dr. Canney describes in his pamphlet what he believes to be a working scheme for the boiling and cooling of an ample supply of drinking water within less than half-an-hour after the arrival of an army at its camping ground, and he has carried out some experimental work in order to prove the feasibility of his theory. As we have said, we do not pretend to express an opinion upon the merits of the scheme itself, but that some means for the prevention of this waste of life can and must be discovered and adopted, we are perfectly certain.

* Typhoid the Destroyer of Armies, and its Abolition. By Leigh Canney, M.D. (Lond.) London: Baillière, Tindall and Cox. 1901.

MANUAL ON ECZEMA.*

THERE is more in this little book than meets the eye in the title page. Some years ago Dr. Erasmus Wilson said, "to be a successful practitioner in the treatment of eczema a medical man must be an accomplished physician; to manage the local treatment with success he must be an able surgeon. . . . In a word, the highest and best qualities of medical art and science must be put into practice with foresight and discretion for the treatment of an eczema." This quotation Dr. Bulkley has kept in view, and his chapters on general hygiene and diet would not come amiss to practitioners of all kinds, whether they are occupied in treating skin affections or not. We are also particularly pleased with the care shewn in this book with regard to the details of treatment. It is really in small details that success in the treatment of skin diseases rests, and the author's careful instructions as to the correct method of applying, retaining, and removing the rubber bandage commonly used in eczema show that he not only recognises this but stressfully teaches it. He considers that, generally speaking, eczema is a constitutional condition, and never wholly local. The chapter on nomenclature is good; it is very full, but by judicious grouping it is made intelligible. Dermatologists will note with interest the definitely expressed views—(1) That micro-organisms only play an important part in eczema so far as secondary lesions are concerned and do not cause the initial lesion, and (2) that arsenic is of little value in the treatment of this disease except in quite special circumstances.

There is a little tendency to repetition here and there, but taking it altogether the author has given us in this manual a very readable and valuable account of a complaint that is always troublesome, and often very difficult to cure.

* Manual on Eczema. Eczema, with an Analysis of 8,000 causes of the Disease. By L. Duncan Bulkley, A.M., M.D. New York and London: Putnam's Sons. 1901. Students' Manual Series.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE.*

PROFESSOR Eichhorst's Text-book has obtained great reputation abroad and its English translation should be widely read. Its leading characteristics may be said to be concise statement—sometime, we think, a little overdone—elaboration of the sections on treatment, and an unusually wide field of subjects, including venereal diseases and the diseases of the skin. Not only is the list of general subjects unusually extended, but rare and obscure conditions, often omitted in text-books, are fully described. For this reason the book is one which is likely to appeal to practitioners as well as to students as a work of reference. It is again noteworthy that the various systems are dealt with very evenly, nor is it easy to allot special praise to one more than another. On the whole, the sections on diseases of the alimentary and nervous systems and the infectious diseases seem to us to come first in point of merit, whilst that on the circulatory system is the one which we think would best bear expansion. The latter, however, has some originality both in the arrangement of its subjects and in the manner in which they are described. We think that the book is a valuable addition to the list of medical text-books of the higher rank, and Dr. Eshner has done good service in placing it within the means of English speaking students.

THE TREATMENT OF FRACTURES†

THIS excellent treatise on a difficult but most important subject is one that may be confidently recommended as dealing with it in a masterly manner, and the large number of illustrations

* *A Text-Book of the Practice of Medicine.* By Dr. Hermann Eichhorst. Professor of Special Pathology and Therapeutics and Director of the Medical Clinic in the University of Zurich. Authorised Translation from the German. Edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic. London and Philadelphia: W. B. Saunders and Company. 1901.

† *The Treatment of Fractures.* By Charles Locke Scudder, M.D., Assistant in Clinical and Operative Surgery, Harvard University Medical School, assisted by Frederick J. Cotton, M.D. Second Edition, Revised. London: W. B. Saunders and Co.

materially increase the usefulness of the work. The author is a keen advocate for the use of plaster of Paris in the treatment of many fractures, and the chapter on the use of this material is well worth perusal. Another chapter is devoted to the Röntgen Ray and its relation to fractures. This is by Dr. E. A. Codman, who discusses the mistakes in interpretation of skiagrams, the practical value of the Röntgen Ray, and its local effect. The treatment of fractures of the spine is summarised as follows: "Fractures of the arches of the vertebra, whether open or closed, should be subjected to operation. Fracture and compression of the cauda equina, after six weeks of waiting for spontaneous recovery, should be treated by operation. In all partial lesions of the cord, operation is demanded. All other fractures showing a complete transverse lesion of the cord should be treated expectantly." It seems a pity to use such terms as "fracture of the hip," and "fracture of the shoulder," which do not convey any accurate meaning and are therefore objectionable. A joint does not admit of fracture, though its constituent bones may be broken and the line of fracture may extend into the joint.

ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE.*

WE have to record the appearance of the sixth and last volume of the present series of Dr. Sajous' remarkable work. As promised in the first preface, the Cyclopædia contains "all the general diseases usually described in text-books," together with a digest of the important progressive work done in all departments of medicine and surgery during the past ten years. The articles, however, are far from being mere abstracts of already published papers, for many of them are in themselves extremely able essays on their respective subjects. Occasionally indeed all reference to literature is omitted, and the

* Annual and Analytical Cyclopædia of Practical Medicine. By Charles E. de M. Sajous, M.D., and One Hundred Associate Editors. Volume VI. Philadelphia, New York, Chicago: F. A. Davis Company, Publishers. 1901.

article takes the form of an original monograph. This for instance is the case in Professor D. D. Stewart's article on Diseases of the Stomach, and some other less important sections. As a rule, however, the articles are interspersed with abstracts of recent writings.

We congratulate Dr. Sajous and his co-editors on the completion of their task, and trust that the work of the succeeding decade may find as admirable a record.

WHAT TO DO IN CASES OF POISONING.*

THIS book has now reached its ninth edition. The fact that it still remains without a rival is due to the fact that it perfectly fulfils the purpose for which it was written, and that there is little or nothing to be added to it. The new Edition is substantially the same as the one which preceded it.

FOURTEENTH INTERNATIONAL CONGRESS OF MEDICINE, MADRID, 1903.

We are requested to publish the following notice :—

The Fourteenth International Congress of Medicine will be held at Madrid from the 23rd to the 30th April, 1903, under the patronage of King Alphonso XIII. and the Queen Regent. The subscription is 30 pesetas (equivalent to 24 shillings). Ladies accompanying members to the Congress will be entitled to a reduction of fares on the Spanish railways, &c., on payment of 12 pesetas apiece (or 10 shillings).

The National Committee for Great Britain and Ireland remains the same as at the Paris Congress, Sir William MacCormac, Bart., K.C.B., K.C.V.O., being the President. The Honorary Secretaries are Dr. Percival Horton-Smith of 15, Upper Brook Street, Grosvenor Square, W., and Mr. D'Arcy Power, F.R.C.S. Eng., 10a, Chandos Street, Cavendish Square, London, W.

* What to do in case of Poisoning. By William Murrell, M.D., F.R.C.P., Physician to the Westminster Hospital. Ninth Edition. London : H. K. Lewis, 1900.

PUBLISHERS' DEPARTMENT.

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New Books, etc., Received.

From Baillière, Tindall, and Cox—

Diseases of the Stomach and their Surgical Treatment. By
A. W. Mayo Robson, F.R.C.S., and B. G. A. Moynihan, M.S.
Lond., F.R.C.S.

We have also to acknowledge the following—

Renal Tension and its Treatment by Surgical Means. By Reginald
Harrison, F.R.C.S.

Remarks on Tuberculosis and its Treatment. By Dr. Baradat.

Exhibition of Orthopædic Cases: British Medical Association, 1901.

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THE
BIRMINGHAM MEDICAL REVIEW.

OCTOBER, 1901.

ORIGINAL COMMUNICATIONS.

INTRODUCTORY ADDRESS:
ON LIFE AND CHARACTER*

BY JOHN W. TAYLOR, M.D., M.SC., F.R.C.S. ENG.
PROFESSOR OF GYNÆCOLOGY, UNIVERSITY OF BIRMINGHAM.

Gentlemen,

It scarcely seems but a few years since I sat in the old lecture theatre across the road and listened to my first introductory from the late Dr. Julius Pollock. It is, however, some thirty years or more, and as I look back over all the road I have traversed since that date, and think of the journey, the men with whom I have travelled, the inns at which I have rested, and then look forward and see the long white road still stretching upward, for

“The road winds up-hill all the way,
Yes, to the very end,”

the main thoughts which come to my mind are those connected with the mystery of this life, and the unfinished lessons to be learnt from its experience. All the manifold teachings of science tend to magnify one's conception of its greatness. Not without reason are we told that—

“Planets have toiled, forgotten suns have burned
That we may live,”

and limitless as is the Past out of which we came, none the less limitless is the Future into which we go.

* Delivered at Charing Cross Hospital Medical School, on the commencement of the Winter Session, October 2, 1901.

Heirs then of all that limitless past, born to take part—and some worthy part—in that portion of the great unfolding peculiar to your age, I would have you take no mean view of your mission and your destiny, feeling assured that however highly you regard it you will still fail of the reality.

Whatever may await us in the future, this much is given us here and now, the gift of present life ; a fortune which may be squandered or spent wisely ; a trust for which, in one way or another, we may have to account, and that to the uttermost farthing.

Therefore it is not a thing to be treated too lightly. Its little ironies may well be subject for humour and amusement, but it is too great a thing to be sacrificed in the pursuit of pleasure ; and, on the other hand, it is hardly so grievous that a man need go to the cloister or the desert in order to escape its many contaminations.

As de Tocqueville has wisely said :—"Life is not a pleasure or a sorrow but a grave business, which has been entrusted to our charge, and which we have to carry through to an honourable end."

"A grave business"—a business that has its dangers and hardships, its times of adversity, in which we have to

"breast the blows of circumstances
And grapple with our evil star."

"A grave business," which has its times of triumph, when the goal of years has been achieved, and a light which is of neither sea nor land floods the long white road with radiance.

A business "entrusted to our charge," and therefore one that we cannot shirk, and one that we cannot lay down until the Bearer of the Great Invitation crosses our threshold.

So to every man, without question or choice, comes the fortune and responsibility of life ; so to every man comes the subsequent question and choice, "What will you do with it ?"

To some of you, I suppose, this day of the Introductory will

mark (as it did to me) the final decision, the acceptance of a special career or destiny, the definite entry on a life-work. Some events in our lives appear to have only a temporary significance, some, have an extended influence over months or years ; others, again, are essentially for ever. To this class the step you have taken to-day belongs. Little as you may now realise it, there will probably be no returning. Of all my fellow-students in the old days I can only think of one who really changed his profession, so that henceforward all your life will be fashioned and coloured by the profession you have chosen, and the great Mistress of Medicine, in whose service you have enlisted, will demand your constant and unswerving allegiance.

The choice is a great one, but it need not weigh on you too heavily. So wide, so increasingly vast is the realm of medicine that in her service every order of mind can find congenial work. In Anatomy and Physiology, with all their connected studies, in Bacteriology, in practical Medicine and Surgery, in Sanitary Science, in the medical departments of the Army and Navy (so well and faithfully served by many Charing Cross men), and in the various legitimate departments of special practice, there is ample scope for various shades of taste and acquirement. Indeed, to most men, the manner of following the career they have chosen is of far greater importance than the making of the choice.

Perhaps you may remember how this idea is expressed by my fellow-townsmen, Mr. Shorthouse, in his novel of John Inglesant. One of his characters applies it—and to the extremest limits—in his review of the different sides of political and religious life which presented themselves for choice to the hero of the book : “ Hereafter,” he says, “ it will be of little importance which of these new names, Cavalier or Roundhead, you are called by, whether you turn Papist or Puritan, Jesuit or Jansenist, but it will matter very much whether you acted as became a man, and did not flinch ignobly at the moment of trial. Choose your part from the instinct of your order, from your birth, or from habit, or what not ; but having chosen it, follow it to the end.

Stand by your party or your order, and especially in the hour of trial or danger, be sure you never falter ; for, be certain of this, that no misery can be equal to that which a man feels who is conscious that he has proved unequal to his part, who has deserted the post his captain set him, and who, when men said, 'such and such an one is there on guard, there is no need to take further heed,' has left his watch and quailed before the foeman, to the loss, perhaps the total ruin, of the cause he had made his choice." (pp. 74 & 75.)

I think, with still greater justice, we might paraphrase this and say : It will hereafter be of comparatively little importance whether you are a soldier or a sailor, a clergyman or doctor, or lawyer ; but it will matter very much whether you acted as became a man called to the duties and responsibilities of the life you have chosen.

Every now and then a man is born with overmastering talent for some special work, and is unhappy and "sterile" until that work is found, but to most men of honest purpose and diligent habit every calling will afford opportunity for advancement and for honour. A good man comes to the front in any work he undertakes according to his industry, and opportunity, and nowhere, I suppose, is opportunity richer than in the walk you have chosen.

But the service of your Mistress must be whole-hearted and generous. What gifts have you to bring with you ? A healthy and well-trained body, a well-educated mind, a high moral purpose—all these She claims for really successful service, and if to this can be added the beginning of some wider culture in literature, in art, and in music, the better and richer will be that service.

I am not one of those who think that the education of medical students and practitioners should be restricted as far as possible to scientific subjects only. There are undoubtedly some men of fine but limited capacity who do well to narrow their energies and fix these solely on the subjects of their special study, but to men of wider taste and sympathies this is not only unnecessary

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but impossible. Accessory studies, however, should be strictly and proportionately subservient to one's life-work and the special study necessary for its mastery.

If this be assured, the wider the culture, the finer and more delicate will be the perception of various shades of difference between health and disease, and between man and man—the better will the observer recognise and describe points that have been missed by those before him, the greater will be his power to grasp and to investigate the larger problems of medicine—those involving many issues.

The ability to express oneself in clear and vigorous language is rarely gained unless one's study of literature has been considerably wider than that afforded by professional writing only. The power to portray both the normal and abnormal by sketches in pencil or colour (so great an advantage in all records of work and in teaching) must be prefaced by some artistic education and practice; and accurate perception of pitch in sound (so much needed in medical diagnosis) comes best by musical training. In addition to these, some knowledge of modern language and especially of German, is almost a necessity if one is to keep pace with the days in which we live and the work that is done in them, while to those who may hereafter devote themselves to the practice of surgery, some knowledge of handicraft, of the bench and the lathe, and the practice of any neat handiwork that presents itself, will be of decided service. This use of the hands, however, will almost always be spontaneously acquired by anyone who has a surgeon's instinct.

These then are some of the good gifts which tend to fit the possessor for the study and practice of Medicine, and which, if you possess them, you lay to-day upon Her altar. Hitherto, you have sought them, perhaps, for your own pleasure and glory. Henceforth you hold them as more or less subservient to your life work, and as helping to fit you for the service you have undertaken.

If I look back on my own experience of life, and of its testing

power, how do these greater qualities of body, of intellect, and of morals stand out in life's struggle? What is their relative value, and what instances can I recall of gain or loss resulting from their presence or their absence?

One of my old fellow students, an athlete and good cricketer, finding as a young practitioner his time unoccupied, scorned to pretend otherwise, spent much of his long summer days in the cricket field, and in his own words "cricketed himself into the best county practice of the district." Doubtless he had many other solid qualities behind his cricket scores, but this was the door or gate which opened for him the pathway to success.

In many other ways, too numerous to mention, the value of a healthy body has been abundantly evident in the lives of many doctors of my acquaintance, and has contributed very largely to their success; in none, perhaps, more so than in those who, by virtue of good work well done, have come to the front and are taking leading positions in their profession. It is not only the manner or quality of work which tells. The very ability to do more than others for years together, which comes from extra physical strength and endurance, has given some men an opportunity of forming an experience beyond their age, and enabled them to reach a point in advance of their fellows which they could never have gained without a splendid physique as the basis of their labour. And what shall I say regarding the want of this? It hampers a man at every turn, and though it is by no means fatal—much of the very best work of this and every age having been done in spite of physical weakness—yet animal strength and spirit and the natural courage and unconscious power which go with it are of the very essence of success.

Some of the very saddest recollections of my life are of eight professional friends—fellow students—nearly all of about my own age, but not all students of this Hospital—in each of whom this power was gratuitously and irretrievably lost by the incurrence of syphilis in early life. One who was well known in the athletic field, and was the champion high jumper of his day, succumbed to paraplegia. Another, a brilliant student,

who took his Fellowship with me and shortly afterwards obtained a good hospital appointment, gradually lost his reason and died of his brain lesion. Another, somewhat similarly affected, recovered slowly from specific hemiplegia, but with more or less impaired function and brain power. Another became blind. Another suffered, and I believe, died from the effects of stricture of the rectum ; and yet another, who probably possesses or did possess exceptional teaching ability which might have been put to noble use, became affected with locomotor ataxy, and now lives a brave but comparatively inefficient life with crippled power and feeble health. I could go on if I wished, and could, if justifiable, give names and dates and circumstance, but I have probably said enough.

Again, I could, of course, append to this list a companion one of lives which have been more or less ruined by alcoholism, but sad as are some of the cases it would include, none strike me as so tragic, so irremediably hopeless as those I have narrated, and you must bear with me if I venture again to insist on de Tocqueville's definition of life as not only something entrusted to our charge, but a trust which must be carried through to an honourable end. Dishonourable—or rather, perhaps, unhonoured—ends lie in wait for all of us who are careless of the sacred nature of the trust, and though suffering may hereafter find its outcome in redemption, this is neither “here” nor “now.”

In dealing with mental gifts and acquirements I find a difficulty. The field is a restricted one. The portals of the profession are guarded, and wisely guarded, by entrance examination, and all throughout the course your progress is tested by repeated examination, so that no one of really feeble or deficient intellect is likely to gain admission. A clear brain and good reasoning powers are undoubtedly needed for the proper understanding of most of the higher problems of Medicine, and for the prosecution of all original work, but the bulk of the studies in which you will be engaged require rather

application than brain power. As anatomists, you must know the human body as the good cabman knows his London. In microscopical anatomy and physiology you learn to know the buildings of which the city is made, their several uses and the work that goes on in them; while in bacteriology you learn to recognise—and by several alluring devices to hunt, confine, and tame—the various animals, domestic or wild, which may seriously infest the city.

In all your studies, even the most advanced of practical medicine and surgery, the simpler mental processes of observation and memory are those which will engage you most, and though to be a really good observer demands a quick perception, undivided attention, and constant practice, no one who has done fairly well at school need be seriously afraid of the mental strain involved by the study and work before him. On the other hand, there is plenty of simple steady work to be done day after day, and there may be some danger that the man with quick and able mind may under-estimate the importance of the daily “grind.”

We all of us know the brilliant student, the pride of his school and his college, who occasionally, from first to last, carries all before him and that easily; but on looking back I am rather astonished at the number of good men I can recall to mind, clever men, men whose mental endowment was, if not of the first rank, yet far above the average, who still, for some reason or other, failed to fulfil the promise of their youth. On the other hand, I can remember some men who were naturally not clever or brilliant, whose brains, in comparison with their fellows' were slow and dull, who, in spite of this, by taking rather longer time to do the requisite work did well: some one or two achieving high distinction. For no man knows a thing so well as he who has had hard work to learn it, and no one, when the lesson is learnt, can so well understand the difficulties of those below him, and therefore so perfectly help them.

It would, of course, be utterly wrong to argue from this that quickness of perception and intellectual ability were of little

worth. They are in one sense the special desiderata of the age. So full is this of rapid change and progress that a certain sharpness and alertness of mind is absolutely necessary in order to keep abreast of the times and occasionally to obtain a chance of leading in the van. In no branch have we seen this more than in surgery, but it applies to almost every calling now, and he who lingers long upon the way is left behind in the race. You know this, you hear it spoken of, you read about it in the daily papers, and the necessity for keenness of intellect, for taking advantage of every kind of technical training, for promptness, hustle, and despatch is preached—and rightly preached—at every corner.

If this were an age in which these things were undervalued, none could speak more strongly than myself on the incalculable advantage of a good brain, trained by education to the very highest pitch of excellence, and therefore enshrining an intelligence well tempered and acute. But, of itself, this does not necessarily command the highest and most permanent success. Even in the life of scholarship or science, where the value of the intellect rises immeasurably, there is still something in the man outside it, on which its beneficent use depends, while in the actual practice of professional life, thought must be united to action at every turn, and both be controlled by healthy judgment for fruitful service. Indeed, the most marvellously gifted man I have ever known, whose powers of intellect and of expression were quite phenomenal, who was, in thought and practice, almost a generation ahead of his contemporaries, must be held to have failed of his proper destiny for want of something—some directing and controlling force—which might have kept the fountain of his genius purer, free from the extravagance of personal ambition and from the mud of unwise and often unjust controversy. And, as I think of these things, I recall also the names of three other of my contemporaries whose histories may possibly be familiar to you—three great Englishmen—men of commanding ability and promise, the sun of whose reputation and career set when it was yet morning, and in one case, that of perhaps the

most original, brilliant, and fascinating intellect my age has known, with a "horror of great darkness."

What then is of greatest value? If life has taught me anything, it is that a high moral purpose is the most important factor in one's life-work; in other words, it is character rather than intellect which determines true success. Now, I do not think that one believes this or realizes it in what is called "student-life." We and our fellows are "gentlemen." The main moral virtues—truth, honour, courage, temperance, gentleness—we take for granted. The real differences between us, the differences that "matter" appear to be those of body and mind, and if we are deficient these are the ones that trouble us. Broadly speaking, this is a healthy view to take. It usually argues that the foundation-principles of morality are so well laid that, though possessed in varying degree, no one is without them, and the atmosphere of "noblesse oblige" engendered by this faith helps many a weak man to act up to the standard of those around him.

But, little by little, there comes disenchantment. The friends we have trusted fail us; some men we meet take advantage of our youth and inexperience; some astonishing lapse of high principle in the conduct of one or more of our fellows startles us, or, on the other hand, some good thing well done by another—it may be some brave act or the ready owning of a fault—arouses our own inner consciousness and calls forth the involuntary question: "Should I, could I have done the same?"

The life of the great city in which we find ourselves begins to alarm us by its injustice and oppression. Its hideous contrasts, the slavery of the poor to the rich—quite as real as that which existed in pagan Greece and Rome, but no longer open and naked and unashamed—the separation and isolation of the successful from the unsuccessful—the hypocrisy of society in which vice is frowned upon openly but encouraged in secret, in which the highest and holiest things are prostituted to ignoble uses—the hopelessness of obtaining any collective effort to alter

this—all strike upon the dawning consciousness with confused but painful clamour. In one way or another we wake from dreams and “make believes,” finding that real life is different from what we fancied. We strive, perhaps, to do right, and have to walk in hard places, while others, with lax principles, achieve a kind of success—a success, however, that is worse than another man’s failure, a success which cannot be touched with dissecting forceps.

As life opens out before us, with cares and temptations, and sudden tests for which we are unprepared, most of us if we are honest with ourselves—I speak from my own experience—find that we, too, are somewhere deficient: that industry, or perseverance, or courage, or sincerity, or self control—or other virtues I have not named—are not so perfect in us as they should be: and there is no School of Morality other than the questionable and polluted one of Life itself in which we can study and train and become stronger. And then, we finally realize—rather late, perhaps—that these after all are the things that matter most!

It would be impossible for me now to consider all the good qualities which go to form the perfect or ideal physician or surgeon, but if you ask me what are the most important of these, without which—or the determination to possess them—it is hardly worth while entering on the actual practice of your profession, I should put in the first place love of Truth, then love of one’s kind, and then love of service. By love of truth, I mean not only the love of careful and exact statement, though this is of the utmost value, but also the discoverer’s love of fact, for the gaining of which he will endure hardship. By love of one’s kind, I mean a ready interest and sympathy in men of all classes, a genuine recognition of brotherhood which will make you enter into their difficulties and sorrows as your own, respect their helplessness and have patience with their ignorance. By love of service, that disposition and attitude of mind and body which finds its chief delight in helping others.

If a man possesses *these* qualifications, or strives for their

possession—though he may have taken no honours at his University—people will *trust* him, because they can believe in his word and his purpose ; they will *understand* him, because he is not ashamed of kinship ; they will love him in proportion to his work for them. And the work of such a man will be good work. It may have the limitations inseparable from the measure of his attainment, but it will be free from humbug or pretence, and every essential accessory within his own control (such as the strictest surgical cleanliness and care) will conspicuously mark his conduct of the cases entrusted to his care.

But what if we know that we are wanting ? What if some of you feel (as I have felt) that neither the body, nor the mind, nor the character that we desire is ours to-day ? What if some of us know that we inherit weaknesses as legacies from those before us ?

Then, whatever may be said regarding bodily attainment (and this is far more capable of development under culture and training than many have imagined) of this you may be certain, that growth of mind and character are practically illimitable, and that there is probably nothing short of insanity that cannot be overcome by education in the highest sense of it.

In these days, when a little truth is occasionally written in scattered papers on the subject of heredity, and almost any amount of fictitious nonsense dealing with this question is scattered broadcast, it seems necessary to preach again the gospel of true education. Believe me, there is no weakness you cannot grow out of if you set your heart upon it, there is no strength or goodness that you cannot aspire to and in some measure attain.

“Μακάριοι οἱ πεινῶντες καὶ διψῶντες τὴν
δικαιοσύνην, ὅτι αὐτοὶ χορτασθήσονται.”

But the way is long, and the heart must be set upon the goal.

“The road winds up-hill all the way,
Yes, to the very end,”

and the hardest lessons are not to be learnt at the beginning.

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26, UPPER THAMES ST., LONDON, E.C.

And at LIVERPOOL and Bath Bridge, BRISTOL.

This is why I said that a high moral purpose was needed rather than a catalogue of virtues. It is the taking of the up-hill path that is the important matter ; the doing of our duty to the best of our ability day by day that brings with it light and leading. For as the distance lengthens, the prospect widens, we get out of the narrow defiles and tangled mazes of the earlier journey, and though the ascent becomes steeper and more painful, more and more of its direction becomes open to our view. Of course there are times of darkness when we can no longer, perhaps, see the way, but if we look upwards there are always the stars to guide us. Even when these are hidden, if we wait patiently, quietly, perseveringly, the cloud will finally "lift," for the stars are always there. Before the ending, too, the sights and scents and stillness of the everlasting hills are about us, and inspire calm and quiet confidence.

But will not the trend of thought I have been pursuing—the influence of character on individual life—admit of a wider application?—the influence of character on national life.

I have lately been visiting some towns in the South of France, where remains of Roman occupation, of Roman architecture, and of Roman life are both plentiful and striking.

At Arles, which is a veritable museum of antiquities, the Arena is still standing ; colossal, magnificent, built on a scale rarely or never attempted by us for any permanent building. It holds easily 25,000 people, and is still occasionally used on great public festivals.

Close by are the ruins of the Roman Theatre, and still further on we find the old burial ground, or Elysian Fields, the cemetery of "les Aliscamps."

Here we may note the care and love and reverence the Romans lavished on their dead. The massive tombs, many of them double, for husband and wife ; the touching inscriptions commemorating the life and work of those who had gone before. Here, a builder of ships ; there, a young girl, fond of and proficient in the art of music, her tomb carved with

representations of the mandolin or guitar, the early organ and other instruments of music ; or here again, the tomb of a boy of seventeen, whose sorrowing friends mourn his premature decease.

Again, if we pass to the Musée Lapidaire and see the carving, the jewellery, and the pottery of these days, some difficult to imitate and impossible to surpass ; if we look at the faces of these Romans preserved to us in marble, strong, fine, intellectual, like the best English faces of to-day (and there is much more Roman blood in English people than many have supposed) ; if we look at the sculptured heads of their children, and particularly I might single out the head of the boy (supposed by some to be a son of Constantine) which for purity and beauty is perhaps the most wonderful fragment of realistic sculpture in the world :—if we consider all this, it seems impossible to conceive how these men, so great, so powerful, so wise, so loving, the successful colonizers and rulers of nearly all the then known world, could have lost their empire and become merely a shadow and a name !

If history is to be believed, and we can read it directly in the later literature of their race, it was not intellectual gifts which became wanting, it was not directly bodily strength that failed, but it was the national character which slowly became depraved. Sapped by the loss of national faith, the increasing growth of luxury and softness, the limitation of families, the relaxation of marriage ties, the elevation of the wanton and courtesan, the disgust of service, the importation of foreign slaves and soldiers, who, many of them, became better and greater than their masters, it was the gradual corruption, effeminacy, and moral decadence of the race which led to its downfall and its ruin.

And what of the national character of England in our own days ? Are there not some indications of similar dangers ?

If you think so, and I could give you many reasons for this fear did time permit, individual awakening may do much to help yourselves and the profession you have chosen. It may finally arouse collective action, and do much to help England.

Gentlemen, we have been passing, and are still passing, through a time of "sifting," as every time of war must be. Older, and as I think, purer ideals are again coming to the front. We begin to realize that the "battle is to the strong," and that the real wealth of a nation consists not so much in her material prosperity as in the numbers of healthy, upright, and manly lives who can give themselves to her service, and protect her in the hour of need. Such have not been wanting in our recent struggles, men who

"Never turned their backs but marched breast forward,
Never doubted clouds would break,
Never dreamed, though right were worsted, wrong would triumph,
Held, we fall to rise, are baffled to fight better,
Sleep to wake."

But we want more of these, and of this faith or spirit which ensures the final victory. You, who will be the doctors and advisers of the future generation may do much by steadily honouring and upholding higher ideals of individual, family, and national life, to infuse a new and healthier spirit into the coming age. For it is in the spirit of Browning's epilogue that the hardest tasks are always accomplished, it is in this spirit that a nation may sometimes be born again.

MENTALLY DEFICIENT CHILDREN.

BY W. A. POTTS, B.A. (CANTAB), M.D. (EDIN.), M.R.C.S. (ENG.),
LATE RESIDENT PHYSICIAN ROYAL HOSPITAL FOR SICK CHILDREN,
EDINBURGH.

DURING recent years much attention has been directed to the fact that there are a considerable number of children who, while not "idiots" or even "imbecile," yet "present a certain amount of mental deficiency, disqualifying them from profiting by the ordinary educational curriculum, and consequently requiring special modes of instruction." Among children seen in schools, about seven per cent., according to Sir Douglas Galton, are mentally dull, and sixteen per thousand require special care and training; these children are peculiarly susceptible to disease, and therefore those who have had charge of either the out or in-patient department of a children's hospital have not failed to notice a decided proportion of such cases among the patients that come under their care.

It is of great importance that the defect should be detected shortly after birth if possible. An early recognition may save the parents much subsequent disappointment, and also paves the way for commencing treatment during infancy; such children should always be treated differently to a normal child, and much good may be done almost from the first by a careful mother acting under supervision. If the child is allowed to develop without the mental defect being recognised or attended to, there is a risk of a rude awakening; mentally deficient children are often sexually precocious, and unless carefully guarded may get into great trouble at puberty, which may occur at ten, or even eight years of age. In other ways difficulties may arise; for instance, I once had charge of a boy ten years old, who had a simple fracture at the ankle joint; it was not noticed when he first came to hospital that he was mentally deficient,

and he was in consequence treated as a normal child of the same age would have been. During the first night he succeeded in getting out of his splints and converting a simple fracture into a compound one ; had his mental condition been recognised earlier, this catastrophe might have been prevented, although as a matter of fact it was only when he was tied hand and foot that he could be kept still. The absence of any sensation of pain which is sometimes noticed in such children, was an unfortunate element in his case. I can recall another mentally deficient patient, a boy twelve years old, who, while working in the bootmaker's shop at an industrial school, amused himself by swallowing two dozen hob-nails and a staple ; these were all passed per rectum a few days later, without apparently doing any harm.

It is impossible here to discuss the question of etiology fully ; there is still much that is obscure, and we have only a few facts. It is certain that chronic alcoholism in one or both parents is a decided predisposing cause, as is also syphilis ; some cases are hereditary, occurring in families with a history of insanity or epilepsy, or what is quite as important, phthisis. Some observers attach much importance to the emotional life of the mother during pregnancy, and also to her physical health ; possibly a few cases owe their origin to consanguineous marriages. In a few cases, however, no cause can be ascertained. It has been suggested that children delivered by forceps are more liable to be weak mentally, but this has been disproved by Langdon Down, who has shown that the forceps are probably salutary, the child running a greater risk from prolonged compression of the head in the pelvis ; indeed he considers delayed delivery a serious risk, as he found that twenty per cent. of mentally deficient children suffered from suspended animation at birth.

Cases of mental defect may be classified into Congenital and Non-congenital, with an intermediate class which Shuttleworth terms Developmental, where "the actual lesion supervenes upon a brain originally imperfect in development."

It is necessary to refer to one or two of the more pronounced

types, although frequently it will be found impossible to assign a particular case to one of these. Of congenital abnormalities, the most striking is Microcephalus ; this condition consists not merely in diminished cranial circumference, seventeen inches being said by Ireland to be the limit, but is associated with a characteristic form in the shape of a narrow, rapidly receding forehead, a pointed vertex, and a flat occiput. The Mongolian is another common type ; these children have a skull of a short oval shape ; the eyes are almond shaped and obliquely set, which features with the squat nose and wiry hair suggest the aspect from which the name is derived. To another type belong the congenital cases of hydrocephalus, and of these it may be mentioned now that no attempt at education must be made till all active symptoms have subsided.

Another, and very important type is that of Cretinism ; a fully developed Cretin with broad thick lips, protruding tongue, thick skin and noticeable fat pads is readily recognised, but there are many slight cases, with the usual symptoms greatly modified, which are liable to be overlooked, except by those who have had considerable experience. Those who have charge of children will do well to bear this in mind in any case, where there is a suspicion of backwardness ; when there is doubt, no harm can be done by trying the effect of thyroid extract carefully administered.

In the developmental group of cases, Shuttleworth classifies Eclamptic, Epileptic, Syphilitic, and some Post-febrile cases, which first demonstrate their weakness at one of the crises of development, such as Dentition or Puberty.

The non-congenital cases may be divided into Traumatic and Post-febrile ; as a matter of fact few really belong to the Traumatic group, although parents nearly always attempt to explain any mental deficiency by some accident after birth.

It frequently happens that a particular case cannot be assigned to any of the characteristic types that have been mentioned ; the diagnosis then is made not by the presence or absence of any one distinguishing sign, but by the detection of several

abnormalities which, unimportant by themselves, when associated with others weigh down the balance towards an unfavourable opinion of the mental condition. The size of the head is of some importance, suspicion being aroused if it is exceptionally large, or exceptionally small; the shape, however, is of more importance, and any a-symmetry should be carefully noted. A very important sign is comparative narrowing of the bi-temporal diameter; when this diameter is markedly narrower than the bi-parietal, there is grave suspicion; if, in addition the external auditory meatus is directed backwards, and the palate highly vaulted, all three being signs of diminished capacity of the higher centres of the brain, the child is without doubt mentally deficient. Great importance has been attached by many to the highly vaulted palate; it is certain, however, that it is not of such great importance in itself, but only in conjunction with other signs. I have failed to find it in several well-marked cases of mental defect, and have observed it more than once in children who were perfectly healthy both physically and mentally. Possibly it is developed after birth in bottle-fed children, owing to the bottle drawing badly, and the child exercising excessive suction power. The tongue may help in the diagnosis; if it is too large and protruding it is suggestive of Cretinism, and in other cases of mental defect it is sometimes found to be transversely furrowed. The ear is often a useful guide; it may be set too far back, while absent lobules, defects in the helix and misshapen pinnæ always arouse suspicion. The teeth are generally irregular; they are frequently crowded, and may be arranged in two rows. Physical defects, such as strabismus, hernia, and talipes, are common in the mentally deficient; the skin is often unusually coarse, and there may be an excessive development of hair. At a later age the growth is often stunted, both height and weight being much below the average.

In many cases a diagnosis must be based largely upon observing how the child progresses, and it will therefore be useful to briefly note the time at which the various functions develop in a normal child; there are, of course, great

variations in healthy children, and considerable latitude must be allowed. Touch, taste, and probably smell are more or less developed at birth, at which time the infant should present a developed voice, and cry vigorously; the power of hearing is soon established; the eyes are sensitive to light from the first, but there is a lack of power to interpret the images received; by the fifth or sixth week, however, objects are recognised, and at the same time the child, whose features have previously been more or less passive, begins to smile. From two to three months is the time at which it can sustain its head without assistance, though this is done in a very vacillating way till the fourth or fifth month. By the sixth month it can sit up with ease, and accomplish many movements with its arms, hands, and fingers, and enjoy playthings. Between the seventh and ninth months it may be put on the floor alone, and can amuse itself; when from ten to twelve months old it begins to crawl, and is generally able to walk at some time between the twelfth and sixteenth months. When twelve months old, the child begins to enunciate single words, and at eighteen months or two years learns to form short sentences.

With regard to prognosis, we must at once admit that with the exception of Cretins, a backward child seldom if ever develops to the same extent as a healthy one; still with careful training, especially when commenced early, much may be done; these children are often very musical, and many show considerable manual dexterity, so that the majority may be taught to do some useful work. The presence of any defect of the senses makes the outlook much more hopeless.

From the first, unless there is some active disease, every effort should be made by the mother or nurse to stimulate the weak mental faculties. The power of attention must first be developed by getting the child to fix his gaze on a bright object; it must be remembered that the senses are often functionally inactive, and require stimulation. Then muscular co-ordination must be attended to. Under careful and patient guidance the child can be taught to talk and play as well as a

normal child, but the learning will take at least twice the usual time, especially as he has to be taught much that a normal child learns of himself. At a later stage, simple Kindergarten training is very helpful, but much individual attention is required. The child should never be placed in a class of healthy children, as the inevitable ridicule and consequent sense of inferiority are serious barriers to progress.

When the time for going to school comes, the child should be sent to special classes, such as are provided by the London School Board, and in some other large towns, or, what is far preferable, placed in a proper institution for such cases, or else trained at home by a specially qualified governess. Music and manual training ought to form a large part of the educational curriculum.

During the whole time constant attention to the general health is necessary; massage from an early age is very useful, and bathing is most important; many cases are considerably benefited by a course of thyroid extract. Much time should be spent out of doors, but it should be spent in work or properly regulated games, no loafing being allowed. The diet should be plain, without much meat. Constipation is often a great trouble; it is best treated by salines continuously administered for a long period, as recommended by Cheadle, and by careful attention to the diet. The use of enemata is to be discouraged, the child soon getting to depend on them entirely, as in a case I saw recently. It is important to remember the deficient sensations and diminished reflexes of these children, this indeed being one explanation of the constipation, while emesis is often most difficult to induce; so also there may be an absence of cough and expectoration, when the lung is diseased.

Dirty habits, a source of great trouble, are to be combated by careful and regular training. There is great liability to bronchial catarrh and other ailments, which must be treated as occasion demands; cod liver oil and Parrish's syrup are remedies of great value.

At puberty, which often occurs early, most careful supervision

is necessary ; the emotional side is frequently well developed—not so the power of inhibition and self-restraint ; unfortunately, therefore, many mentally deficient female children are found a few years later in the various Magdalen Homes, where it may often be noticed that practically all the inmates show well-marked signs of mental defect. Every effort should be made to keep these children under supervision as long as possible ; when they are older, they must be discouraged from marrying and perpetuating an unhealthy stock.

ON DISPLACEMENT OF THE HEART.

BY T. STACEY WILSON, M D, M.R.C.P.,
PHYSICIAN, BIRMINGHAM GENERAL HOSPITAL.

IN this paper I do not intend to discuss all the possible ways in which the heart can be displaced, and the causes at work in each case. To do so would not be possible within the limits of this communication. But I propose to discuss those cases of displacement which are of most practical and diagnostic value to the clinician, such as those due to alteration in the volume of one or other, or of both lungs; while I shall hardly touch at all on cases of displacement due to deformities of the spine, or to those due to the presence of well marked intra thoracic growths or aneurysms.

As I am, in this paper, dealing with this subject from the clinical rather than from the anatomical or pathological standpoint, I may perhaps be excused for saying a few words at its commencement upon the physical examination of the heart, and more especially upon its percussion.

For defining the size of the heart, I believe that there is nothing better than the old-fashioned method of percussing the heart, using the fingers both as plessor and as pleximeter. I know that very good and satisfactory results in mapping out the heart have been obtained by one and another of the newer methods of percussion with plessors or pleximeters of various materials, or by combined auscultation and percussion, but I feel convinced that none of these accessories are needed if the hand which acts as plessor be properly trained to give the right kind of light, elastic stroke, and if care be taken to modify the kind and strength of stroke according to the fulness and the kind of resonance that is obtainable.

As to the kind of percussion to be used for mapping out the heart, some clinicians rely wholly upon the absolute cardiac dulness for indicating changes in the relationship of the heart to the chest wall, because of the certainty with which it is possible

to ascertain how much of the heart comes out from under cover of the lungs, and is thus in direct relationship with the chest wall. Others, again, always depend upon the area of relative cardiac dulness, *i.e.*, the area over which the heart comes near enough to the chest wall to lessen the fulness of the lung resonance. This method does not give such accurately definable results as the other, and, moreover, the force of the percussion stroke required must be greater, and is sometimes unpleasant for the patient; but, while this method has its drawbacks, it is in my opinion the more valuable of the two, and by its means a much more accurate idea of the true size and position of the heart is, I believe, obtainable, than by studying the absolute dulness only as is sometimes recommended.

As a matter of practice we shall do well not to discard either the absolute or the relative cardiac dulness in our study of the heart.

As a means of accurately defining the size of the heart, palpation is second only to percussion, and not infrequently gives quite as full information as can be obtained by percussion. Inspection, as a method of examination is specially important when dealing with the low pressure pulsations originating in the right ventricle, such as the wavy impulse shown in the 2nd left interspace of the right ventricle in cases of upward displacement and enlargement in anæmia, or the faint and impalpable pulsation which is shewn by the right auricle in the right nipple line where some cardiac displacement brings the right auricle or the dilated origin of the inferior vena cava into closer relationship to the chest wall than normal. (*Vide case 7*).

Auscultation also may yield very useful information as to the situation of the various parts of the heart, if we are careful to note the areas over which the several cardiac sounds are best audible. This is especially the case when we are studying the relationship of the heart to the posterior chest wall.

With these preliminary remarks we now come to our subject proper.

The heart may not only be displaced by forces such as pressure or tension acting upon it from without, but it may also be prevented from taking up its normal position in the chest in consequence of alterations of its own shape, and we may therefore have

I. CARDIAC DISPLACEMENT DUE TO CHANGES WITHIN
THE HEART ITSELF.

The simplest illustration of such a displacement is in the case of a tumour or an aneurysm of the heart pushing the heart out of its normal position. Clinically, such cases are so rare that I need not do more than give as an example a case where an intrapericardial aneurysm displaced the heart downwards and to the left to a very considerable extent.

Under this heading of internal causes of displacement I must refer to those cases where the special type of dilatation of the right ventricle which occurs in anæmia and chlorosis, causes a tilting of the heart upwards, and to the left, as described by Dr. Foxwell in "*Essays in Heart and Lung Disease*," page 343.

In these cases the increase in size of the right ventricle seems also to swing the whole heart to the left and upwards. The right border of the heart may occasionally be noticed to shift as much as an inch to the left of its former position when the dilatation comes on, and the apex (and presumably, the lower border of the heart also) rise from the 5th interspace in the vertical nipple line to the 4th interspace an inch or more external to the nipple line. The upper border of the heart at the same time also rises into the 2nd interspace.

A considerable part of this apparent displacement upwards and to the left is undoubtedly due to simple increase in size of the right ventricle itself, but in addition there seems to be a certain amount of true displacement of the heart.

The following case illustrates the rapidity with which this change in the position of the heart may come on in an adolescent when the pulmonary circulation is disturbed by pneumonic consolidation.

Case 1.—H. H., aged 17. Taken ill, June 25, at 9 a.m., with abdominal pain and vomiting. On admission to hospital next day, he had severe pain in the right iliac region, the muscles on the right side of the abdomen were rigid, and he was supposed to have appendicitis. The pain was, as the result proved, really due to a right basal pleurisy which gave no signs at first. The lungs which were clear 48 hours after the onset of his illness, rapidly became consolidated, and by the evening of the 2nd day the right lower lobe was affected, and on the 3rd day the left apex, the left lower lobe, and half of the right lower lobe were consolidated. On this day (June 28,) the cardiac dulness, which on the previous day was normal, was as follows: upper border at the 2nd rib, left border at the nipple line in the 2nd interspace, and in the 4th interspace it was at the mid-axillary line, $5\frac{1}{2}$ inches from the sternum. The lower border of the heart was at the 5th rib. The right border of the heart was at the right edge of the sternum. Two days later, when the dilatation of the heart was less extreme, it assumed the state which is typical of the condition we are describing. Its upper border was at the 2nd rib, and its lower border at the 5th. Its right border was 1 inch to the left of the sternum, and its left border was nearly an inch external to the left nipple line. At this time the whole of the left lung was consolidated and the lower half of the right lower lobe also.

But most cases of cardiac displacement are due to changes in the surrounding viscera.

II. EXTERNAL CAUSES OF DISPLACEMENT.

The heart may be pushed or pulled out of place by alterations in the volume of the lungs, or of the abdominal organs, or it may be displaced by the growth of tumours in the thorax or abdomen.

The displacement may take place in any of the six directions in which a body is free to move in this space of 3 dimensions which is the characteristic of our universe. I shall base my classification of cardiac displacements upon the direction of

the displacement, and in the following order. 1. Forwards.
2. Backwards. 3. Downwards. 4. Upwards. 5. To the left.
6. To the right.

1. *Displacement forwards.* The normal position of the heart is such that no considerable amount of forward displacement is possible, although aneurysm or tumour in the posterior mediastinum would cause rather more of the heart than normal to come into contact with the anterior chest wall.

2. *Displacement backwards.* This is of course frequent in emphysema where it occurs in combination with displacement downwards, as a result of the over distension of the lungs, and especially of the thin margins which overlie the heart. A certain amount of displacement backwards also frequently results from compensatory enlargement of the right lung which accompanies disease confined to the left one.

3. *Displacement downwards.* This is perhaps the commonest of all kinds of displacement in consequence of its occurrence in emphysema, where the pressure of the over-distended lungs, together with the descent of the diaphragm upon which the heart rests, causes the heart to occupy a lower position in the thorax than normal, as is shown by the increase of cardiac pulsation in the epigastrium.

Displacement of the heart downwards is also produced by certain kinds of aneurysms of the aortic arch, or by mediastinal tumours.

4. *Displacement of the heart upwards.* As the heart lies upon the central tendon of the diaphragm, anything which causes the ascent of that structure will raise the heart to a higher level in the thorax than normal. Anything increasing the intra-abdominal pressure sufficiently to raise the diaphragm will therefore cause upward displacement of the heart. This occurs in the case of ascites, or the abdominal distension of peritonitis, enteric fever, etc. More important from the clinical point of view is the upward displacement of the heart which is brought about by flatulent distension of the stomach, because this is very often seen in heart failure, as a consequence of faulty circulation, and

the additional cardiac embarrassment caused thereby may, when life is trembling in the balance, turn the scale against recovery.

But the diaphragm does not only rise as a result of pressure from below, it may also undoubtedly be *drawn* upwards by a diminution in the volume of the intra-thoracic contents. As to the nature of this diminution I am not at present prepared to dogmatise. It may sometimes be due mainly to a diminution in the size of the lungs owing to changes following upon alterations in the respiratory functions as in cases of chlorosis, but it is in my opinion sometimes certainly due to a diminution of the total volume of the blood which the heart is able to put in circulation. For instance, in a case of sudden cardiac failure, such as from an influenzal affection of the heart, the diaphragm can be observed, in the course of a day so, to rise to an inch or more above its normal position, carrying the lower border of the heart up to above the level of the 5th rib in, and internal to, the nipple line on the left side.

The following is an instance of such a case—

Case 2.—A young man, aged about 28, in good health, was suddenly seized with severe abdominal pain of a colicky nature, accompanied by syncopal attacks, in the first of which his pulse rate fell to below 40 per minute. The heart remained very feeble, and some ten days or so after the onset of his illness, the cardiac dulness was greatly diminished in area, and its lower level did not reach below the 5th rib. Although there was not the least sign of any gastric distension, full gastric resonance was obtainable up to the 5th rib in and internal to the left nipple line, and in the middle line under the sternum full gastric resonance was obtainable up to the level of the 5th rib, and full pulmonary resonance above it. To the right the liver was one interspace higher than normal. As the heart got stronger the liver and the stomach returned to their usual level, showing that the diaphragm, and with it the heart, had also returned to its normal position.

Another condition in which this upward displacement of the heart (due to the ascent of the diaphragm) is observable, is

where it may reasonably be supposed that there is a diminution in the total volume of the blood in circulation. Thus I have seen it more than once in enteric fever accompanied by a hollowing of the abdomen and a shrinkage of the limbs and face, evidently pointing to a diminution of the circulating fluids of the body, from failure of absorption of nourishment.

A very marked case, of which I now give some particulars, occurred in a young woman under treatment for gastric ulcer with a suspicion of impending perforation. The diminution in the supply of nourishment, necessitated by rectal feeding, brought about the following condition. *Vide fig. 2.*

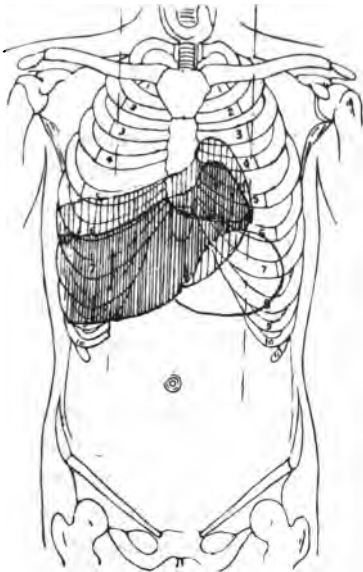


FIG. 1.

Normal percussion of heart, liver, and stomach.

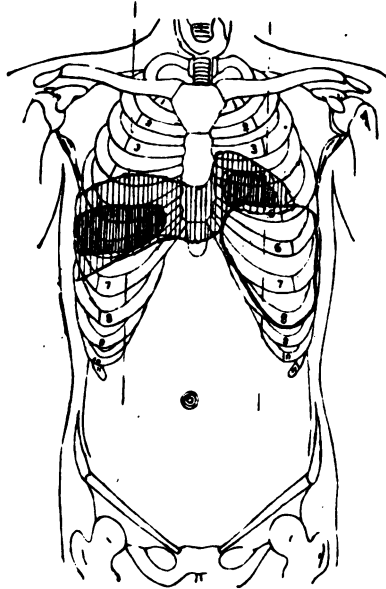


FIG. 2.

Case 3.—Showing displacement upwards of heart, liver, and stomach

In both figures the close shading represents absolute dulness and the light shading relative dulness. The area of gastric resonance is outlined and left unshaded.

Case 3.—A. V., aged 21, "was fed mainly by the bowel until three or four days ago. The gastric resonance to-day reaches

up to the upper border of the 5th rib in and internal to the left nipple line, and there is no dulness at all in the 5th interspace. The lower border of the liver in the middle line does not reach as low as the tip of the xyphoid cartilage, and in the right nipple line the relative dulness of the liver commences at the 4th rib, and the absolute dulness at the 5th rib, while the lower edge of the liver does not seem to reach lower than the 6th interspace as there is full intestinal resonance below this level. In the mid-axillary line intestinal resonance reaches as high as the 8th interspace, and the lower edge of the lung only comes down to the lower border of the 6th rib."

The condition is shown in fig. 2, with which can be compared the normal relationships as shown in fig. 1.

We now have to deal with—

5. *Displacement of the heart to the left.* Displacement of the heart to one side or the other is of extremely common occurrence in diseases of the lungs and pleura, and the presence and amount of the displacement is often of the greatest clinical value from a diagnostic point of view.

I need not point to the well known displacement of the heart which occurs in extreme pleuritic effusion or in empyema. Its significance has long been recognised and appreciated.

In these cases the heart is pushed out of place by the pressure of the accumulated fluid. But, as in the last case, the heart may not only be pushed out of place by excess of pressure on one side of the thorax, but it may also be drawn out of place by the traction of a lung which is shrinking and becoming fibrosed as a result of chronic inflammation, or from other cause, or by the traction exerted by the absorption of pleuritic fluid when the lung is too much damaged to expand again. It is possible to produce a far greater amount of cardiac displacement in this way by traction of one lung (combined with a compensatory enlargement of the other) than in the first mentioned way, by means of pressure. I have the notes of several cases where fibrosis of the left lung has drawn the heart so much to the left

that the heart practically lay in the left axilla, and the right border of the cardiac dulness was in the *left* nipple line.

Cases showing such an extreme degree of displacement are of interest clinically, because they show the completeness of nature's efforts to cure by the absorption and cicatricial contraction of the diseased lung tissue. They have not, however, the same clinical and diagnostic importance which the slighter cases have, where the recognition of a slight amount of cardiac displacement may throw important light upon the diagnosis and treatment of the case.

The following is such a case—

Case 4 —Charlotte D., aged 44, admitted to General hospital with left pleural effusion. Her doctor had tapped her chest three weeks previously and drawn off clear serum, but it had apparently reaccumulated and he therefore sent her to the hospital for further treatment. The left base was dull with diminished breath sounds, etc. as far up as the angle of the scapula and hypodermic puncture showed the presence of serum in the left pleura. The question now arose as to the need for again tapping the pleura, the breathing being considerably embarrassed, and the amount of dulness suggesting a not inconsiderable pleuritic effusion. On percussing the heart, however, it was found that the right border of the cardiac dulness did not reach the left edge of the sternum, because the resonance of the right lung crossed over to the left of the middle line as far as midway between the sternal edge and the left nipple line. The left border of the heart was also displaced one inch or so to the left of its normal position. From this slight displacement of the heart *towards* the pleural effusion it was evident that absorption was going on as fast as possible and that there was already what might almost be called a negative pressure in the left pleural cavity. The reason for the non-absorption of the fluid was the inability of the lung to expand and further tapping could do no good. The case was treated by respiratory exercises with a view to aiding the expansion of the lung with a satisfactory result.

Another case illustrating the value of a careful mapping out of the right border of the heart, is that shown in fig. 3.

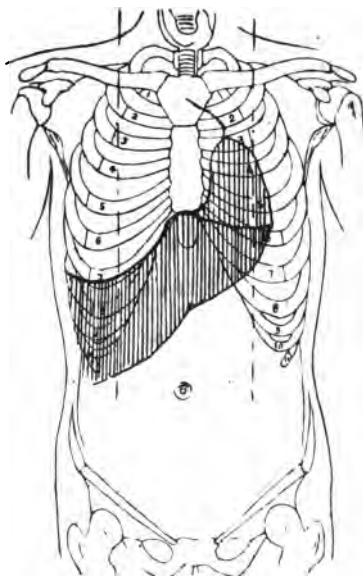


FIG. 3.

Case 5.—Displacement of heart to the left
and the liver downwards.

Case 5.—It is the case of a man, aged 58, who fractured a rib on the left side some three weeks prior to his admission to my wards for pleuritic effusion on the injured side. On admission, there was dulness and absent breast sounds up to the 3rd rib on the left side. The cardiac dulness reached to the edge of the sternum, showing little or no cardiac displacement. This was not to be wondered at in a man of 58, whose fibrous tissues must naturally be fairly rigid. Next day, 60 oz. of blood-stained serum were removed from the left pleural cavity, and afterwards it was found that the left lung remained rather dull and that the right lung crossed over to the left of the sternum for $1\frac{1}{2}$ inches in the 2nd left space, and $\frac{3}{4}$ inch in the 3rd space, showing some displacement of the heart towards

the affected lung. On examining the lower border of the right lung it was found to be displaced downwards, as shown in the diagram fig. 3, as was also the liver.

Now this patient gave a history of having had no previous illness ; but, taking into consideration his age and the probable rigidity of his tissues, it was not credible that a pleurisy with effusion, lasting at most two or three weeks, could have caused the displacement of his heart and liver already described. Consequently, in spite of his statements to the contrary, it was certain that the unexpanded condition of the left lung dated back many months, if not years, and was not due to the traumatic pleurisy which followed the accident.

Careful questioning elicited the fact that he had been rather short of breath for a long time, and brought out a history pointing to a very long standing pleurisy of the left side. Here the careful search for a slight degree of cardiac displacement led to the making of a correct diagnosis. The evidence given by the slight displacement of the heart would have been most important if an action for damages had been brought by the patient.

6. *Displacement of the heart to the right.* In the cases of lateral displacement to which I have referred, the displacement of the heart has been to the left, but precisely similar help in diagnosis can be obtained where the disease has involved the right side, except for the fact that the heart does not seem quite so free to move towards the right side as towards the left, and cases of displacement to the right seem to be less frequent than those to the left. See also page 228.

Case 6.—Before leaving this subject I will briefly refer to a case illustrating a somewhat less frequent cause of displacement. The patient was an old man suffering from bronchitic symptoms. Examination of his chest showed the fact that his heart was much displaced to the right and its right limit of pulsation was in the right nipple line. The action of the upper part of the right lung was very defective, and it was evident that there was a considerable amount of fibrosis of it. This shrinking of the right lung coupled with the compensatory enlargement of

the left lung was the cause of the displacement of the heart. The fibrosis of the right lung was due to the infiltration of the root of the lung by a malignant tumour.

The man lived some months and before his death the tumour had increased so much in size that its growth more than made up for the destruction of the lung, and the heart was pushed back into its normal position. This was verified at the *post-mortem* examination.

ALTERED RELATIONSHIPS OF THE HEART WHEN DISPLACED.

When the heart is pushed or drawn out of its normal position, there is often a certain amount of rotation as well as simple alteration in position, and I propose in conclusion to briefly discuss this subject.

The fact that the heart rotates when moved in certain directions shows that certain of its attachments are more fixed than others, and it will help the consideration of the subject to summarise briefly its points of attachment and their relative fixity.

Generally speaking, the ventricles of the heart are most free to move, and the auricles the most fixed. But to understand the changes which take place, a more detailed view is necessary.

The right auricle is fixed to the diaphragm by the inferior cava.

The right auricle is fixed to the deep fascia of the neck and the root of the lung by the superior cava, etc.

The left auricle is fixed to the roots of the lungs by the pulmonary veins.

The upper anterior part of the right ventricle is fixed to the anterior part of the root of the left lung by the left branch of the pulmonary artery.

The upper anterior part of the right ventricle is fixed to the posterior part of the root of the right lung by the right branch of the pulmonary artery.

The upper central part of the base of the heart is fixed to the fascia of neck, etc., by the aorta.

Of these, the attachments of the aorta and superior vena cava

are farthest from the heart and of less value than the others in preventing, or interfering with, cardiac displacement.

The attachments to the roots of either lung are on the other hand short, and will greatly tend to hinder displacement of the organ, *provided* that the roots of the lungs are not themselves tending to move.

Now the attachment of the right auricle to the diaphragm by means of the inferior cava is the shortest of all the above mentioned points of attachment, and the fibrous portion of the diaphragm to which it is attached is also, except for the normal range of upward and downward movement decidedly a fixed point. I believe this point, where the right auricle is practically fixed to the diaphragm, is to be regarded as the pivot around which the heart turns in the various displacements to which it is subject. In the lesser degrees of displacement, the fixation of the left auricle (which lies posteriorly) to the roots of the two lungs is also a fixed point, so long as the roots of the lungs themselves remain fixed. In the extreme cases, however, where collapse of one or other lung is accompanied by great increase in size of the other, there is good reason to believe that the median position of the root of the lungs does not remain unchanged, but that the structures of the posterior mediastinum are moved over *en masse* by the shrinkage of the one lung and the increase in size of the other. I have in several instances been able to demonstrate during life that the trachea enters the thorax well to the left of the middle line in cases of extreme displacement of the heart to the left.

Some movement of the root of the lung also is suggested by the fact that in these cases the lower dorsal vertebrae become resonant, and the resonance of the right lung can be detected to the left of the spine, owing to its having crossed the middle line.

With regard to the presence of rotation of the heart on itself when displaced upwards or downwards, there does not seem to be any reason to expect that such should occur, nor is there any clinical evidence of such rotation.

In displacement to the right, however, the case is different, and the changes the heart undergoes seem somewhat complicated. The following is a summary of such a case :—

Case 7.—T. F., aged 43, suffering from bronchitic symptoms. Physical examination of the chest showed that there was very considerable fibrosis of the right lower lobe, with some excavation. The upper part of the right lung and the whole of the

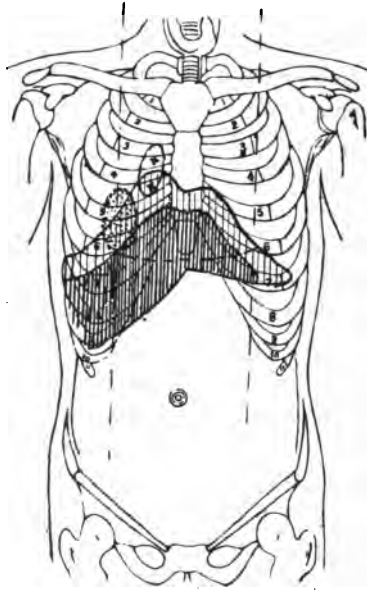


FIG. 4.

Case 7.—Displacement of heart to the right.

Dotted area = auricular pulsation,

x = area of maximum loudness of 2nd sound.

left were healthy. The heart was drawn over to the right, and the cardiac dulness and pulsation were mainly to the right of the sternum. The cardiac and hepatic dulness were as shown in the diagram, fig. 4.

An auricle was pulsating in the right nipple line (over the area which is dotted in fig. 4), and this must have been the

right auricle. There was ventricular pulsation above and to the left of this area, as far as the 3rd interspace midway to the right nipple line. Over the upper part of this area the second sound was well heard, and its area of maximum loudness was in the 3rd and 4th right interspaces, as shown in fig: 4. This must have been the right ventricle, and the area of maximum loudness of the second sound showed the situation of its conus arteriosus and the origin of the pulmonary artery some 2-3 inches to the right of the usual position. There was a little cardiac dulness to the left of the sternum in the 4th and 5th interspaces, with faint pulsation and almost inaudible heart sounds. This meant that the left ventricle was not as near the chest wall as normal.

The explanation of this condition is as follows, and it is a type of what may be expected in displacement of the heart to the right by shrinking of the lung.

The traction of the contracted lung takes place through the branches of the pulmonary artery and vein which go to the affected lung.

Now the right branch of the pulmonary artery takes origin from the front of the heart, but passes behind the aorta to get to the right lung. Traction in this artery will therefore tend to rotate the heart about an axis running through the two relatively fixed points, viz., the aorta, and the base of the right auricle when the cava passes through the diaphragm. This rotation would bring the right border of the right auricle forwards into closer contact with the chest, and make the left ventricle and the apex of the heart recede from the chest wall just as was shown to be the case by the physical examination of the patient.

A similar effect will be produced by the traction on the pulmonary veins, running as they do from the diseased lung to the left auricle posteriorly.

As regards the displacement of the heart to the left by retraction of the left lung. In this case there is but little rotation, as the vessels pulled upon arise from the left side of the heart, and the fixed points are on the opposite side.

There is, however, sometimes a slight degree of rotation and the left ventricle and auricle come to lie rather more anterior, and the right auricle more posterior, than would be the case were the heart simply pushed over as a whole.

As to the presence of murmurs. This is a somewhat complicated question, and one that is by no means settled at the present day. I am glad, however, to be able to make a clear statement on the subject, namely, that it is possible to have the most extreme degrees of displacement, either to the right or to the left, without any murmurs at all. This also holds true of the displacement which accompanies dilatation of the right ventricle as described on page 218, for in this case there was an entire absence of murmurs. If, however, these same displacements occur in anæmic individuals, there may be extremely loud murmurs, into which I cannot go in this paper. There is certainly no characteristic murmur in these cases, and I have often, I must confess, felt surprised at the absence of murmurs in cases of extreme cardiac displacement.

This absence of murmurs, even in extreme cases of displacement, shows that the attachments of the heart to the chest wall are nowhere rigid enough, as a rule, to produce kinking or compression of the large vessels, such as would be the case were, for instance, the roots of the lungs immovably fixed to the spine.

It also helps to explain the slightness of the cardiac symptoms which are noticeable in a simple case of cardiac displacement, even when extreme in degree—more especially when such displacement is towards the left. In fact, the heart seems capable of doing its work as easily when lying in the left axilla, as when it is in its normal situation.

I cannot therefore say that there are any special symptoms characteristic of cardiac displacement, or that any special treatment is necessary.

SURGICAL ABSTRACTS.

THE SURGERY OF THE BRAIN.

BY LEONARD GAMGEE, F.R.C.S. ENG,

Case of Abscess in the Left Lateral Lobe of the Cerebellum, successfully evacuated. Michell-Clarke and Morton, *Bristol Medico-Chirurgical Journal*, June, 1901.

The patient was a girl, aged 13, who four months before her admission into the Bristol General Hospital had nasal catarrh followed by discharge of pus from the left ear. A month after this she complained of pain in the forehead, mostly on the right side, and also vomited. This pain continued for four days, when she became unconscious, and remained so for three days, at the end of which time a large amount of pus was discharged from the left auditory meatus. Five days after this discharge from the ear, she began to suffer from fits of the following description:—The patient screamed, her face became red, and her knees were drawn up: the arms were extended over the head, and the hands clenched; all the limbs became rigid, and the body bent towards the right side. Each fit lasted two or three minutes. From that time until admission, she suffered from these fits frequently, from continuous headache, and from one or two attacks of vomiting daily.

She was admitted into the Hospital on April 4th, 1901. Her temperature was 97°, pulse 84, and respiration 20. She was very emaciated, and was a little deaf in the left ear, from which there was a slight discharge. She answered slowly to questions, after pausing for a time. She vomited frequently, lay on her right side, with her legs drawn up, and indicated the right frontal region as the seat of the pain. The eyes deviated slightly to the right; the pupils were of normal size, equal, and reacted to light. There was double optic neuritis, most marked on the right side. The grasp of the right hand was fair, while

that of the left was very feeble, and there was some tremor on movement of the left arm and hand. The patient could not stand, and when placed on her feet fell to the right side. Sensation was normal.

Clarke draws attention to the fact that the general symptoms of intra-cranial abscess were present, viz. :—Subnormal temperature, headache, double optic neuritis, convulsions, slow cerebration, constant vomiting. The localising symptoms were :—The position in bed, marked paresis and tremor of left arm (same side), eyes diverted to the right (opposite side), headache on right (opposite) side of forehead, tendency to fall to right (opposite) side, discharge from left ear (same side).

All these symptoms were in favour of the presence of an abscess in the left lobe of the cerebellum. The other usual position for an abscess of the brain in connection with ear disease is the temporo-sphenoidal lobe ; but the absence of anaesthesia, of hemiplegia, of paralysis of the third nerve and of aphasia contra-indicated the presence of a temporo-sphenoidal abscess.

On April 6th, Morton removed a trephine disc from over the vertical portion of the left lateral sinus, and then enlarged the opening upwards, so as to expose the temporo-sphenoidal lobe, and downwards and backwards, so as to expose the cerebellum. From the latter, two ounces of pus were let out, and the patient made a good recovery.

Morton advises exploration of the brain with a canula and blunt trochar. He also advises repeated puncture ; as in this case it was only after the fifth puncture that pus was found. It is worthy of note that the patient's breathing was very slow during the operation.

Cerebral Abscess ; operation ; recovery. Gardner, *New York Medical Record*, August 3rd, 1901.

The patient was a man, aged 21 years, who had suffered from a purulent discharge from the left meatus since infancy. On March 23, 1901, he complained of pain over the left mastoid

process and had a temperature of 103° . On March 24th, the mastoid was opened up, the middle ear cleared out and the antrum and tympanum laid into one. After the operation the temperature came down to 100° , while the pulse varied from 60 to 84; but with the subsidence of the fever nearly complete word and letter blindness and complete agraphia came on. On April 3rd, the aphasia was nearly complete; the temperature was normal and the pulse varied from 50 to 60. There was ptosis of the left eyelid, also slight paresis of the right foot and deviation of the tongue to the right. There was no tenderness on percussion over any part of the head, but the patient complained of severe pain over the right eye and at the root of the nose. A disc of bone was removed at a point $1\frac{1}{4}$ -ins. behind and above the external auditory meatus, and about 2 ozs. of foul pus let out from the temporo-sphenoidal lobe. The patient made a good recovery.

Traumatic Epilepsy; wide opening of the lateral ventricle; recovery; recurrence of epilepsy. W. W. Keen, *American Journal of Medical Sciences*, July, 1901.

The patient was a male, aged 19 years, who in 1892 was thrown from his horse, striking the right side of his head over the occipital and posterior portions of the parietal bones. A large scalp wound was produced and the skull was fractured, some of the fragments of bone being removed by operation. A year after the accident a piece of necrosed bone was discharged and since March, 1899, the patient had suffered from epileptic fits. In view of the fact that nothing was done at the time of the injury except the removal of some pieces of bone, and in view, too, of the comparatively recent onset of the epileptic fits. Keen decided to explore and accordingly did so on April 17, 1901. After turning down a flap of the scalp over the seat of the injury, he found two openings in the skull. He removed the piece of bone between these two openings and incised the dura, beneath which appeared a thin, dark coloured sac, apparently the wall of a cyst. This was incised, and Keen found that he had opened

the lateral ventricle; the fornix and choroid plexus being clearly visible. On making the opening several ounces of fluid escaped. Keen decided that it would be wise to drain for a time and accordingly put in a small rubber tube and a gauze drain. The escape of so large an amount of cerebro-spinal fluid caused no symptoms. In a few hours' time the tube was removed and the next day, the gauze drain also. The patient recovered from the operation, but the epileptic attacks recurred.

Keen states that at one time he collected notes of all the recorded cases in which the lateral ventricle had been opened, and he was surprised to find that what had usually been considered a fatal accident, was relatively speaking harmless. He refers, of course, not to mere puncture into the ventricle, but to a wide opening of it.

Gun-shot Wound of the Head followed by hemiplegia, traumatic epilepsy and abscess of brain, due to the embedding of a portion of the bone in the brain for fourteen months. W. W. Keen, American Journal of the Medical Sciences. July, 1901.

A man, aged 21, was struck on the right side of the vertex of the head by a rifle ball, which passed completely through the head and emerged on the other side and which must have passed either directly through or just below the superior longitudinal sinus. He remained unconscious for six weeks and at the end of that time his epilepsy began. This was most marked on the left side of his body. Before Keen saw him, three operations had been done with a view to curing the epilepsy, but without result.

When the patient came under Keen's care, there was left hemiplegia with contraction, but there were no sensory disturbances. On March 30th, 1901, the right motor areas were explored, and a piece of bone was removed from beneath the surface of the brain, lying in an abscess cavity containing half an ounce of pus. The patient recovered from the operation, but at the time of writing it was too early to speak as to the epilepsy.

Keen draws attention to the facts :—

- (1) That at three operations the piece of bone embedded in the brain-tissue had been missed.
- (2) That the abscess was opened more than a year after the original injury had taken place.

MISCELLANEOUS.

Reduction of Dislocations of the Shoulder; Hofmeister's Method.
New York Medical Record, Aug. 3, 1901.

The plan is simple, and requires for its execution a vertical extension apparatus and the necessary weights. The patient is laid on the uninjured side, and the injured arm is bandaged as high up as the insertion of the deltoid, so as to secure a firm hold for the extension cord. The latter is passed over a pulley, and a weight of about 11 lbs. is attached. This holds the limb in a position of complete vertical extension, and exerts a continuous pull against the muscles of the shoulder girdle. After a few minutes more weights are added, and this process is kept up till the contraction of the muscles is overcome and the head of the humerus is drawn to the edge of the glenoid fossa, into which it either slips spontaneously or can easily be pushed. The time required varies from 15 to 45 minutes. The advantages claimed are avoidance of anæsthesia, simplicity, and entire absence of danger.

The Suture of Wounds of Large Blood Vessels. A. E. Halstead,
New York Medical Record, August 3, 1901.

Halstead quotes the following case :—On Dec. 14, 1900, he was excising a nodule of recurrent carcinoma just below the coracoid process. Several months previously he had removed the breast, pectoral muscles and axillary contents by the complete operation. Just as he was finishing the excision of the nodule, and was separating it from the adherent axillary artery, he accidentally cut the vessel obliquely through about two-thirds of its circumference. The bleeding was temporarily controlled by pressure. At the time of the first operation all the branches of

the axillary artery, except the circumflex, had been divided, so that there was practically no chance of collateral circulation being established. The only chance of saving the arm was to suture the artery. Accordingly four interrupted cat-gut sutures were passed through the two outer coats of the vessel and tied. This effectually closed the wound in the vessel, so that no bleeding followed the removal of pressure from the artery. To support these sutures, the perivascular connective tissue was stitched longitudinally with a fine cat-gut suture. The radial pulse was at once restored, and was as full as that of the opposite side. The patient made a good recovery, and had at no time any disturbance of the circulation of the arm. Two months after the operation the radial pulses were of equal volume.

According to Halstead, the indications for arterial suture are :—

- (1) In all cases of injury to a large vessel or vessels, where ligature might bring about serious nutritional changes in the part supplied by the injured vessels. This is especially apt to occur when the corresponding vein is injured at the same time.
- (2) In all wounds of large vessels produced by puncture, gun-shot, or laceration.
- (3) In operation wounds of large vessels, when for any reason a part of the vessel must be sacrificed.

In wounds involving no more than half the circumference of the vessel, either oblique or transverse, simple suture only is required. When more than half the circumference is involved, resection and end to end union by invagination is the best treatment. After end to end suture by any method, the vessel in most cases ultimately becomes obliterated as a result of endothelial proliferation; but, as a rule, this does not occur until after several weeks have elapsed, the vessel remaining patent long enough to prevent any serious nutritional disturbances in the parts supplied.

THE THYROID GLAND.

The Experience of Forty-two Cases of Goitre treated by Operation. Marmaduke Shield, *Edinburgh Medical Journal*, July, 1901.

The medicinal treatment, which Shield recommends, is the administration of potassium iodide with tincture of iodine, in the proportion of 3 grs. of the former with 1 minim. of the latter. He has increased the dose of the tincture to 3 minims, but has never gone beyond that limit. The mixture has always been administered in a glass of water after meals. The thyroid extract pushed to full doses has also given good results, but it is impossible to say at present what cases are benefited by iodine and what by thyroid extract. In one case hydriodic acid was tried and answered well. Shield considers that sea air, especially that of the East Coast, is a most important adjunct to the iodine treatment. He has but little belief in the efficacy of local measures, and most strongly deprecates the injection of iodine or perchloride of iron into the substance of goitres. Any local inflammatory action set up by these agents must seriously prejudice the chances of the patient, if operation subsequently becomes necessary.

As regards the forty-two cases operated upon, in only six could the presence of adenomatous tumours be distinctly made out. The greater number of these adenomatous tumours were in the thyroid isthmus and were detected by their marked mobility. The capsule of the gland was incised over them and they were shelled out. In one case free hæmorrhage occurred from the cavity, but was arrested by plugging with iodoform gauze soaked in turpentine. Attention is drawn to the danger of cutting into goitres for the enucleation of supposed adenomatous tumour which do not exist. Shield has seen one case of repeated hæmorrhage in such a case, and in his judgment no supposed adenomata of the thyroid gland should be cut down upon, unless they can be distinguished as mobile rounded tumours, quite distinct from the gland substance in which they are embedded.

In five cases cysts were discovered. Those of small size were treated by opening, painting with carbolic acid, and packing with iodoform gauze; but, here again, trouble may arise from hæmorrhage. The two cases of very large cyst were treated by exposure of the cyst wall, aspiration, incision, and then stitching the cyst wall to the skin, a drainage tube being put in and the cavity afterwards regularly irrigated with iodine-water. In each instance the after treatment lasted over many months, but the results were quite satisfactory.

In one instance the right lobe of the gland was removed in a case of exophthalmic goitre, with a good result, both locally and constitutionally. As his routine method of operative treatment, Shield removes one lobe and the isthmus.

REVIEWS.

UTERINE FIBROMYOMATA, THEIR PATHOLOGY, DIAGNOSIS AND TREATMENT.*

THIS is a most presentable book, well printed in clear type on good paper, and neatly and carefully bound. It is another example of excellent American publishing.

Mr. Bishop has made an exhaustive study of his subject, and we can only do him justice by considering the various portions with him.

Classification is always a difficult matter and the author gives three methods. The first is the simplest and most practical method and consists in simple division of the tumours into hard multiple encapsuled tumours and soft single unencapsuled tumours. They are also classified according to position and pathological description.

It is worth noting that according to Bayle 20 per cent. of women over 25 years of age suffer from myoma, and 40 per cent

* Uterine Fibromyomata, their Pathology, Diagnosis and Treatment.
By E. Stanmore Bishop, F.R.C.S. London: Rebman Limited, 1901.

of women over 50 years are likewise affected according to Klob. The author gives a very full and convincing account of the danger of leaving fibroid tumours of the uterus to fate and their own destiny.

It is one of the surprising things of medical life to notice how narrow visioned we all are, and if we have to go round two corners before being able to see a thing take place, we prefer to deny or ignore the event altogether. Such has been the custom and inaction of the past. Because Dr.—in his single experience has never seen a patient die immediately from hæmorrhage due to fibromyoma, although he has been frightened several times, he hardens his heart and says these fibromyomata are all pretence and can be neglected entirely. It is therefore a good thing that the author and others are watching the progress of fibromyomata more carefully and are proving that these growths are not so comparatively harmless as was formerly considered.

The chief dangers from induced changes are given: inflammatory adhesions and inflammation of ovaries and tubes; sloughing or necrosis of fibroid; pressure upon the ureters and kidney changes; cardiac degeneration, fatty and brown atrophy; obstruction of intestine after removal of tumour.

There is a very good account of the vascular supply of the parts, the account is greatly from Howard Kelly's work and from Fredet's recent researches. Some of the paragraphs require resetting, and there are one or two slight grammatical errors in this chapter, but anyone who has read it and grasped the matter will be more sure of success in operating.

The chapter on development is most interesting. Developmentally, uterine fleshy tumours may be divided into three groups:—

First, those arising from endothelium of vessels—sarcoma.

Second, those arising from muscular wall—hard and soft fibromyomata.

Third, those formed of new vessels—telangiectatic and lymphangiectatic tumours.

These are, no doubt, approximately true. But it must be remembered in discussions of this kind that all the cells of the germinal layers have a common origin; and that epi-, meso-, and hypo-blast are the same cells specialised; also that the uterus contains vestiges of many tubes and glands whose origin may be hypo- or epi-blastic. The factors of origin of tumours of the uterus are thus uncertain and varied. The tumours will be varied and irregular, and no rigid laws can be formed concerning them.

In arguing against sarcoma arising from fibromyoma, the author says: "The vessels of sarcoma are mere channels in the growth; they have no walls properly so called. Hence we must either believe that, as above described, the change begins at first at the innermost layer of such vessels, or that it spreads immediately inwards, and is able to entirely destroy them; so that, however early the observation, no trace of degeneration or healthy vessels can be found—a very difficult thesis to defend."

Ziegler says: "The vessels of a sarcoma have generally walls which are quite distinguishable. In some cases the tumour cells bound lumen of vessel. Here it would seem as though tumour had arisen from cells of vessel wall."

The author is thus arguing on false premises, as is so often the case in special monographs when dealing with pathology.

Calcareous infiltration and necrosis, due to lessened blood supply, and œdematous transformation (myomatous and fibrocystic) are well described.

As regards cancer resulting from fibromyomata it is said that the study of embryology has proved that it is impossible. In all these questions we must bear in mind what we are talking about. If we are considering abstract subjects then this statement is true. That is, given a tumour of the uterus is a pure fibromyoma, of course no epithelial tumour can arise from it so far as experience has gone. But practically we are speaking of fibroid tumours of the uterus, and when operative questions and lines of treatment have to be decided it will be seen at once

that we have no guarantee from nature that the tumour we think is a fibromyoma shall have no epithelial elements in it. In matter of fact they are often present as inclusions or vestigial effects of epiblastic or hypoblastic tissues.

The treatment of fibromyomata is clearly, fully, and carefully given. Medicinal treatment is considered and weighed and found to be wanting, except in the palliative effects of ergot and its congeners.

Electrical treatment is useful as a caustic, general tonic, and preventer of hæmorrhage in uncomplicated cases. It does no good in fibrocystic and sarcomatous tumours, nor in those complicated by salpingitis or ovaritis.

Zestocausis or atmokausis is not favoured at all, but it is probably quite as effective as electrical cautery. Operative treatment is fully given, and a good review of modern surgical treatment and its evolution. When we speak generally of surgical treatment for fibromyoma of the uterus we do not mean removal of a fibroid polyp, a pedunculated subserous fibroid, or a submucous fibroid, but we mean the removal of a tumour implicating the uterus intimately, and one might say awkwardly. Here it comes to hysterectomy or enucleation of the tumours or tumour. The author favours hysterectomy rather than enucleation, and in this perhaps more and more surgeons will agree.

The disinfection of the skin, vagina, and operator's hands is gone into very fully. The biniodide is the author's favourite antiseptic, because it is stronger than the sublimate and does not precipitate albumen. There is some doubt as to whether it is really more effective than the sublimate.

The author gives his views generally on the technique of operations and abdominal sections, and they are in accordance with the practice of the day.

In speaking of the removal of the appendages for fibromyomata the author does not mention that a great reason of failure of this operation is the difficulty of removing the whole of the ovarian tissue, especially as when the parts are adherent

some living ovarian tissue may be left behind in adhesions. Page 186. "Franklin H. Martin's operation, or vaginal ligature of the entire broad ligament." This is not so. The ligature only includes the uterine artery and base of the broad ligament.

The various operations are given in detail, but really there is very little reason for some of the varieties being specially described and ticketed with the authors' names, unless it be that the custom started with midwifery forceps.

As regards removal of the appendages, the author says he has never looked upon it as a scientific operation, and therefore has never performed it. No doubt this is true, but it would probably also be true to say that when removal of the appendages was the only operation practically safe to perform Mr. Bishop and others did no operation at all, unless cauterisation, electric or otherwise, be so counted, for the relief of their patient. It is an operation deserving every consideration, and is by no means to be swept out of existence by mere statements that it is defunct. If the case is one of enlargement of the fundus where there are no adhesions and the patient is esanguined, it is advisable to perform this operation, and even if hysterectomy be done later that operation is not rendered more difficult.

The author argues strongly in favour of complete closure of the peritoneal cavity and against drainage, and probably all surgeons are in agreement on the point. The only question is how often is this possible. In the simple cases, no doubt the peritoneal flaps fall together or can be held together by the iodoform gauze for a sufficiently long time to ensure union even without suture; but in the complicated and adherent cases it would be idle to expect the peritoneum, however willing and capable it may be, to absorb all the blood and exudations, and there is no doubt that the best thing is to get the fluids with any germs in them outside the peritoneum as quickly as possible where the germs may breed as they please without injury. In some cases too, it is possible to start bleeding and loosen the pedicles by

manipulating the peritoneal flaps after all sutures are on. For this reason, it is perhaps advisable to catch the peritoneum, front and back, with a fine suture when it is first incised. If these sutures be passed from side to side a good square union of peritoneum in the middle line is obtained, when they are tied and there is a small drain hole left on each side through which fluid may escape, and if there is no fluid to escape, the sides fall together and peritoneal union is obtained.

The author says some surgeons boast of leaving gauze in the vagina eight to ten days. He always finds it offensive in three or four. When the case is simple the top piece of gauze may be left a week or even ten days without boasting any more than one would boast of a similar dressing on a breast. A well-cleaned vagina without any secretions to decompose from the uterus must be aseptic practically speaking. There is no necessity to put another gauze drain in after the first one has been withdrawn. No vaginal douche should be given for twenty-four hours after its withdrawal, and then a simple boracic vaginal lavement is used. The author dresses his abdominal incision with celloidin, and finds it very satisfactory. However, a clean sterile compress or iodoform gauze is quite satisfactory, and it is possible that sealing a wound may prevent escape of serum or little oozing. The author lost a case from pent-up pus. Many surgeons tuck a corner of the gauze into wound to drain it. When gauze is simply put on without plaister and with a simple binder a patient can roll about fairly freely in bed without doing harm. It is well to change the gauze after twenty-four hours and leave the second layer on until union is complete. Calomel is given within twelve hours in hot tea. It has been given immediately before operation, and although most of this may be vomited it is probable that a moiety is retained. If so the action is quicker, and the first twenty-four hours may be a rigid fast if necessary.

It is always well worth the time for any surgeon to reconsider his after treatment of abdominal section, and in this work there

is an excellent discussion of the leading reasons for the methods adopted.

Perhaps the most interesting and instructing chapter is that upon after results of the operation for fibromyomata. It is reassuring and satisfactory to find that the evil results are small, and due to defects in operative manipulation. Very great pains have been taken by the author to get the views of operators and authorities in a position to see the failures if any arise. The workhouse infirmaries have so far seen very few of the evil results, if any exist, and the author naturally infers that few evil results do exist. Why should there be any in simple cases?

It may be permissible to say that the author's views upon hysterectomy resemble those of Mr. Christopher Martin to a very great extent, and he pays Mr. Martin the respect due to his having proved the combined panhysterectomy to be so safe and efficient an operation.

Supravaginal hysterectomy with retroperitoneal treatment or the stump has been so successful, especially in America, that it will take much evidence to displace it; but there is some ground for thinking that finally Mr. Bishop's views will be found sound, and that surgeons will remove the whole of the offending organ. They do so now when the tumour and uterus are removed per vaginam, and it is a matter of perfection of operation and safety to bring the abdominal operation into the same line.

It can be strongly advised that every medical man should read Mr. Bishop's work. Those who are not well up in the subject will learn very thoroughly the points at issue and modern practice; and those who are well versed in the matter will find many new points of interest and much sound reasoning, in the consideration of which they will not injure their surgical mind. It is to be hoped that Mr. Bishop will bring out many editions of his work, and if he keeps his present equitable mind the work will finally become, even if it is not now, the standard work upon the subject which it treats upon.

FRED EDGE.

THE STUDENT'S MANUAL OF VENEREAL DISEASES.*

This work, of which the seventh edition has just been published, has been revised and partially rewritten by the authors, and is dedicated to the medical students of the United States. The small volume is briefly and clearly written, and special points are italicised throughout. The author in his original preface states that it has been his aim to make the book concise, and to eschew all mooted points. We confess that we do not think these laudable motives have been very satisfactorily carried out, for the book is too concise in some respects, while in others, mooted points are not eschewed.

The first part of the work deals with chancroids. And in discussing buboes, one cause of this complication is stated to be "sympathy." This leads one to suppose that reflex nervous influences are brought into play, and takes no account of septic absorption. Such a term is liable to produce a wrong impression in a student's mind. Chancroids in women are further accused of burrowing up into the rectum, of destroying the sphincter, and producing stricture, while as a complication of this formidable list, phagedæna may supervene. A pretty dismal picture, as the author remarks. We trust that this form of chancroid will not spread to this side of the Atlantic.

The author states that phagedæna is due to constitutional not local causes. This is, to say the least, a dogmatic statement, as we have always been taught to consider the local causes to predominate in importance.

"To soak the penis," suffering from chancroids, "in hot water to the point of faintness," appears to us to be heroic treatment. We doubt its effect on the lesion, but have some fears for the rest of the organ.

In the treatment of suppurating buboes, we should have been glad to see the recommendation to remove the necrosing glands after laying open the abscess cavity.

* The Student's Manual of Venereal Diseases. Sturges and Cabot.

The question of giving mercury before the appearance of secondaries is discussed on p. 55. It is advised to wait ; and the author is fully entitled to his opinion. At the same time we think that few will be found to agree with him, and trust that students all the world over will be impressed with the fact that mercury should be given as soon as the typical Hunterian chancre and "shotty" bubo are observed.

The existing terminology of syphilis is perhaps not what it should be, and the author is to be commended for attempting to make the names less "complicated and confusing." His attempt commences well, but ends up with subdivisions in which such terms as "maculo-papular" and "tuberculocrustaceæ" are employed. Thus, we fear, he defeats his own object.

We have heard occasionally of difficulty experienced in the diagnosis between chancroids and ulcerating gummata, but it appears to us altogether superfluous to instruct students to make microscopical examination of the secretion of the ulcer, in order to detect the presence, or absence, of the streptobacillus of Ducrey, or of the bacillus of Lustgarten. Perhaps a prolonged differential cultivation, and microscopical examination in the hands of a skilled bacteriologist, might turn the scale in case of doubt, but we cannot be sure even of this.

Gummata of the carunculæ lacrymales, lacrymal gland and body of the uterus, are given undue prominence, for so rare affections. While Hutchinson's symmetrical superficial ulcers of the tonsils, in early secondary syphilis, and periosteal nodes of long bones and separation of the epiphyses in the hereditary form, are entirely omitted.

Paralysis of the fourth cranial nerve is stated to cause the patient inability to turn the eyeball upwards and outwards. The author no doubt meant downwards and outwards.

On p. 132, we are told that the child, having arrived at the age of puberty, is suddenly "attacked with a swelling of the joints, notably of the knees, ankles, elbows, and wrists, less frequently of the clavicle or of the lower jaw, which comes on slowly, without pain, or any other of the concomitant symptoms

of inflammation. This swelling goes on quietly, and usually breaks down, giving vent to a thin sanious evil-smelling discharge, which is not purulent in the strict sense of the term, and which is accompanied with the presence of dead bone, as discovered by the probe." In commencing to read this sentence, it seemed to us that reference was being made to the quiet synovitis which so often accompanies interstitial keratitis. Then we thought of periosteal nodes, on the clavicle and jaw. Next it struck us that gummata were affecting the various structures of the joints, or that the epiphyses were primarily involved; and finally, that saprophytic organisms had gained access to a syphilitic lesion of some part of a joint, or neighbouring portion of bone. After mature consideration we are at a loss to understand all that the paragraph is meant to convey.

In dealing with Gonorrhœa, the author points out that some gleet may be due to chronic vesiculitis, but we do not consider he gives sufficient prominence to granular patches in the deep urethra. We cannot agree with him that it is best to open periurethral abscesses by an internal urethrotomy.

On the whole it may be said that "The Treatment of Gonorrhœa, and its Complications," is the best chapter in the book.

No fault can be found with the paper, or the printing, which are of the best; but we confess to a feeling of disappointment that the main symptoms of syphilis and gonorrhœa, and their chronological order of appearance, are not dealt with as systematically and accurately as we could have wished.

PERNICIOUS ANÆMIA.*

IT is now over fifteen years since Dr. Hunter first took up the investigation of Pernicious Anæmia. In 1885 he began that brilliant series of observations and experiments on the elucidation of one of the most abstruse problems in medicine. The

* Pernicious Anæmia. By William Hunter, M.D., F.R.C.P. London: Charles Griffin & Co.

results of many of these studies have already been given in the *Practitioner* and other periodicals, so that we are now accustomed to associate many of our conceptions of pernicious anæmia in its etiological, clinical, and pathological aspects with Dr. Hunter's name. The work which he now gives us in the form of a monograph, represents therefore an infinite amount of labour, of original research, and of most patient investigation. Some three years alone were given to histological observation regarding the origin and significance of blood pigment in the different organs under varied conditions of disease. A further period of more than five years was devoted to experiments, having as their object the elucidation of the nature and sites of blood destruction to be followed by extensive observations on the etiological and clinical aspects of so important a subject as that of pernicious anæmia. As might be expected, such a long investigation has opened up by-paths of clinical pathology, which the author in many instances has considered it a duty to thoroughly investigate, lest some hidden problem bearing on the main question might be overlooked. As an instance, we may refer to the author's valuable contributions to the pathology of jaundice by means of which some very obscure questions have received a flood of light.

As might be expected, the writer has much to say on the history of pernicious anæmia, and in his first chapter he places before the reader such a review of the subject that one might almost be tempted to think oneself perfectly familiar with it; a review of the subject culled from the writings of Addison, Immermann, Quincke, and many others. But when Dr. Hunter begins his own description, when he states his own conclusions, tracing these step by step from experiment and investigation, then only do we realise that our knowledge of pernicious anæmia was, before this of a very elementary character. It is of course well known from Dr. Hunter's previous writings what his position is regarding pernicious anæmia. He considers it a special anæmia of a primary kind, due to a pathological hæmolysis taking place in the gastro-intestinal area associated

with changes in the liver, catarrh and erosion of the intestines, gastritis in some cases, or it may be atrophy of the stomach, and also certain septic changes originating in the mouth. Indeed, Dr. Hunter strongly emphasises in his book his opinion that oral sepsis may be the chief etiological factor in pernicious anæmia. The morbid anatomy of pernicious anæmia is described at length, the changes in the general organs, blood, bone marrow, spleen, liver, and kidney being fully detailed, and in many instances illustrated by carefully executed plates. Hæmolysis in health and in disease is given under the head of experimental investigation. The significance of pigmentation in the liver, spleen, and kidney is set forth and the case for pathological hæmolysis is so ably sustained that it is not surprising to find oneself easily convinced of its truth. The writer concludes that cases of hæmorrhage or anæmia-producing lesions, such as malignant disease, however closely they may resemble pernicious anæmia in their results, that such resemblance is merely superficial. Such factors do not seem capable of causing pernicious anæmia. This latter is rather a chronic infective disease. It is the result of infection of the digestive tract, especially of the stomach. Frequently, also, although to a less degree of the mouth and of the intestine. The chief source of this infection is oral sepsis arising in connection with long-continued and neglected cario-necrotic conditions of teeth, sometimes, possibly arising from other causes, *e.g.*, drain poisons. The result of this infection is a chronic infective lesion of a portion of the alimentary tract, mouth, stomach, or intestine healing up in one part and then spreading to another causing in time deeper changes, *e.g.*, ulcers of the mouth and tongue, chronic glossitis, and atrophic changes in the tongue; chronic gastritis and atrophy of the gastric glands. Such are in brief Dr. Hunter's conclusions as to the special etiology of this disease. Under the head of treatment, attention to the mouth is required. The writer does not think that washing out the stomach is likely to be very effective, though it may certainly aid other forms of treatment. He favours the use of salol, naphthol, calomel and other methods

of intestinal medications, but arsenic above all as giving the best results. Diet in pernicious anæmia has always been an important factor in the opinion of Dr. Hunter, his view being that it should be non-nitrogenous, and that "feeding-up" is not advisable.

Such is a brief review of this important monograph. It is without doubt one of the ablest contributions to the subject of Hæmatology which has yet appeared.

TEXT-BOOK OF MEDICINE.*

THE appearance of a new Text-Book of Medicine might at first sight seem uncalled for, but in point of fact it is some years since such has been published in this country. There have been larger works in the form of "systems," which have a purpose of their own, and fulfil that purpose, but they cannot be regarded as text-books. Various American works have appeared within the last ten years, many of them most excellent, many the reverse; and, notwithstanding the merits of the better ones, we doubt whether any of them will appeal to the reader in the same way that an English text-book would. The work which has now been published under the editorship of Dr. Gibson is, without doubt, one that will prove an undoubted success. The time has probably gone by when a book on medicine, other than a very elementary one, could be written by one man. In the present instance a long list of contributors is a guarantee for the quality of each article. These contributors are all well known in the literature of medicine, and write with authority on the various subjects committed to their care. The arrangements of this Text-Book of Medicine does not call for any special notice, as it in no way differs from the plan usually followed in this country. We may briefly state

* Text-Book of Medicine. Edited by George Alexander Gibson, M.D. Young J. Pentland. Edinburgh and London.

therefore that the work opens with an introduction on the "General Pathology of Disease," in which the usual subjects are carefully discussed and also the Pathology of Bacterial Infection, a section which naturally occupies a portion of every work which aims at being complete. This portion of the work, which is one of considerable extent, is mostly written by the late Professor Kauthack, but was incomplete at the time of his death. Such portions as were omitted by this distinguished writer have been ably supplied by Prof. Woodhead, his successor. Section I. gives an account of the general diseases and the specific fevers. The purpose of a text-book of medicine is perhaps well served by grouping under this head such diseases as the Specific Fevers, Syphilis, Tubercle, Acute Rheumatism, Rheumatoid Arthritis, Rickets, and Diabetes; while, perhaps, a larger work with more space at its command would sub-divide such a section on pathological grounds. There is a section on diseases caused by animal parasites, and another on conditions due to chemical substances such as lead, mercury, alcohol, ptomaines, etc. The remainder of the first volume deals with diseases of the alimentary system, many of the articles being by Dr. Sydney Martin, others by Drs. H. P. Hawkins and Hale White. In the second volume are contained the sections on diseases of the hæmo-poietic system, the heart, the lungs, renal disease, the integument or skin, and the nervous system. To criticise the various articles in such a text-book is no easy task. To comment on the opinions of one author who writes on the whole subject of medicine is comparatively easy, for he necessarily shows the cloven hoof in many cases, but when the articles come from an authoritative pen the case is different. To disagree with some of the opinions expressed is only what can be expected, but such dissent does not pre-suppose inaccuracy or false conclusion. One remark we feel compelled to make. The sections on subjects such as the larynx and the nose are strangely short. The subject of Hay Fever is included in a single paragraph. There is no reference made to diseases of the bladder or the rectum. It may be argued that these subjects pertain to the specialist and

the surgeon, but we think this a mistake. There is at present a tendency to exclusiveness which is not advantageous. The physician, be his pet subject what it may, ought to have a working knowledge of such subjects—in fact the list might be considerably enlarged—as in numberless instances the key to diagnosis of a case may be in some so-called special department or surgical condition. The physician who ignores the examination of the bones will one day find himself treating for acute rheumatism a case of infective periostitis. Viewed as a whole, we can confidently state that this “Text-Book of Medicine” is one that will be of inestimable service. It is eminently a book for those who are reading for university examinations. It is a sound work for the every-day practice of medicine. It is sufficiently comprehensive, and at the same time sufficiently free from controversial element to become a standard work. We cannot close these remarks without congratulating the publisher on the style of the book. The two handy volumes, clearly printed on good paper, are important features of the work, and add considerably to its value.

MANUAL OF DISEASES OF THE EAR.*

THIS text book is in its third edition, which has been revised and partly re-written. It now forms a compendious royal 8vo. book, well written and up to date. In 1884 we reviewed the first edition of this work, and we then pointed out that in the illustration on page 5 the perforation in both illustrations were small and circular. “The author does not mention the mirror of Messrs. Mayer and Meltzer which has an oval perforation and which is undoubtedly the best.” Does Dr. Barr know that the

* Manual of Diseases of the Ear, including those of the nose and throat in relation to the ear. For the use of students and practitioners of medicine. By Thomas Barr, M.D. Third edition. Revised and partially re-written. With two hundred and thirty-six illustrations. Glasgow: James Maclehose and Sons, publishers to the University. 1901.

centre of a concave mirror is practically useless, and that the cone of light comes from the periphery? Messrs. Mayer and Meltzer have made mirrors with an oval hole an inch long and half an inch wide for some years past; some of which are to be seen in use at the present day at the Birmingham Ear and Throat Hospital. If Dr. Barr likes to satisfy himself as to the capacity of a concave mirror which has an oval hole of the size mentioned above, let him gum on a piece of blackened paper of an inch by half an inch in the centre of the mirror, and try to reflect from any source of light; he will see the image of the source as plainly as with the whole mirror. The small hole has no justification for its existence, while the large one has. With it you get rid of diffraction fringes; the eye can range without moving the mirror, and it serves as a useful adjunct in nose and throat work. The mirror is one of $3\frac{1}{2}$ inches in diameter, with a focal length of 13 inches.

On page 12 is a curious mistake, "the beak should measure an inch in length, and should form an angle of 135° degrees with the rest of the catheter." There are some ten or twelve illustrations which appear twice or even three times apparently without cause; they are even in the index of illustrations. We cannot see any good to be derived by the reader from this reduplication, and it certainly makes the book larger and more costly. On page 175 is a reference to page 86, it should be page 248. On page 182 is a reference to fig. 138A, which is an illustration of an exostosis, and on page 192 there is a reference to page 182 which is certainly wrong, for the author is speaking of a glass button which he removed and not an exostosis. This is misleading. On page 105 rubber ear protectors are advised for bathers, while on page 200 no mention is made of rubber plugs for divers and artillery men, though they are advised to plug their ears with cotton wool.

With these few exceptions, it is admirably adapted for a text book, of which Dr. Barr ought to feel proud.

DISEASES OF THE NOSE AND THROAT.*

THIS edition is larger by fifty pages than the first. It is well printed on good paper, and is fairly up to the average of books on the Nose and Throat. We had quite thought that the laryngeal brush had been given up by the leading laryngologists in favour of a small wool mop which can be easily made, and when used consumed in a fire ; but on page 400 are figured three sizes of these brushes. Many of the laryngologists would, we fancy, be glad of a few patients, who would carry out the advice on page 403, "after local treatment has been duly carried out great benefit will often result from a course at Ems, or Aix-les Baines, followed by ten days or a fortnight at some bracing place."

On page 359 *strong beef tea* is given as a "liquid and assimilable food." The late Dr. Milner Fothergill said "it had no food value whatever," and most of the authorities have followed in his footsteps. Of course beef tea made with heat contains only the salts, etc. of the beef, because the heat coagulates the albumen which is thus rendered insoluble, and is usually skimmed off the surface to be thrown away.

We hope that in another edition *strong beef tea* will be relegated to its proper place as being only a tasty, stimulating drink, not nearly so good as Liebig's extract.

One matter has been borne upon us during the reading of this book, namely, the number of Doctors' names that appear in its pages.

There is also no discrimination between men whose names are alike, such as Mackenzie. We do not know whether it is Morell Mackenzie, John Mackenzie, J. N. Mackenzie, or Hunter Mackenzie.

* Diseases of the Nose and Throat. By F. D. Haviland Hall, M.D., F.R.C.S. Lond., and Herbert Tilley, M.D. B.S. Lond., F.R.C.S. Eng. Second edition. Lewis's Practical Series. London, 1901.

A RETROSPECT OF SURGERY DURING THE PAST CENTURY.*

FOR the subject of the first Hunterian Oration of the present century, Mr. Poland very appropriately chose a retrospect of the advances made in Surgery during the century which has just come to an end. The subject is not new, but Mr. Poland's oration has unusual merit both in composition and in the breadth of ground which he has covered. The manner in which the real progress of the century has been compressed into its last twenty or thirty years is, however, very striking, for with the exception of a reference to the introduction of anæsthetics, Mr. Poland's retrospect commences with the work of Lord Lister. This is not surprising, for until the mere fact of operation ceased to be a prolific cause of death through ignorance of the principles of asepsis, it was obviously impossible for the range of major operations to receive any great extension. When once it became a safe matter to produce an artificial wound, the advance of surgery began, and the enormous strides which it has made in the course of a few years is well brought home by the author's interesting retrospect.

New Books, etc., Received.

From Rebman Limited, London—

Guide to the Microscopic Examination of the Eye. By PROFESSOR R. GREEFF. Translated from the Second German Edition by HUGH WALKER, M.A., M.B., C.M.

A Handbook on the Theory and Practice of Medicine. By H. W. SYERS. M.A., M.D. Vol. I.

International Directory of Laryngologists and Otologists.

From H. K. Lewis, London—

The Sanitary Inspector's Handbook. By ALFRED TAYLOR. Third Edition.

From Cassell and Company—

Advice to Women. By FLORENCE STACPOOL.

Surgical Applied Anatomy. By SIR FREDERICK TREVES and ARTHUR KEITH, M.D.

* A Retrospect of Surgery during the Past Century. Being the Hunterian Oration of the Hunterian Society, 1901. By John Poland, F.R.C.S., Surgeon to the City Orthopædic Hospital, Senior Surgeon to the Miller Hospital. London: Smith, Elder, and Co., 1901.

From John Wright and Co., Bristol—

Kitchen Physic. By W. T. FERNIE, M.D.

Pulmonary Tuberculosis. By CARLO RUATA, M.D.

Golden Rule Series for Diseases of Children By GEORGE CARPENTER, M.D.

From The Scientific Press Limited—

Tendencies to Consumption and how to Counteract them. By J. D. E. MORTIMER, M.B.

From Sampson, Low, Marston and Co.—

The Nordach Treatment of Consumption. By JAMES ARTHUR GIBSON.

From W. B. Saunders and Company, London and Philadelphia—

Atlas and Epitome of Ophthalmoscopic Diagnosis. By PROF. O. HAAB.

Bacteriology and Surgical Technique for Nurses. By EMILY M. A. SLANEY.

Sexual Impotence. By VICTOR G. VECKI, M.D.

Rhinology, Laryngology and Otology, and their Significance in General Medicine. By E. P. FREIDDRICH, M.D.

Modern Obstetrics. By NEWMAN DORLAND, M.D.

Practical Surgery for General Practitioners. By NICHOLAS SENN, M.D.

The Illustrated Medical Dictionary. By NEWMAN DORLAND, M.D.

We have also to acknowledge the following—

The Story of the Papaw. By F. P. KILMER.

The Electrolytic Transmission of Sulphur from the Harrogate Sulphur Water through a Pig's Skin, and its Therapeutic Value on the Human Subject under similar circumstances in Eczema, Gout, etc. By FRANCIS WILLIAM SMITH, M.D. Aberd.

Study of Man. By ARTHUR MACDONALD.

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THE
BIRMINGHAM MEDICAL REVIEW.

NOVEMBER, 1901.

ORIGINAL COMMUNICATIONS.

INAUGURAL ADDRESS
ON THE TREATMENT OF WOUNDS IN WAR.*

BY W. WATSON CHEYNE, C.B., M.B., F.R.C.S., F.R.S.,
PROFESSOR OF SURGERY IN KING'S COLLEGE.

IN reviewing the surgical experience gained in South Africa, two very important questions naturally occur to one, and it is to these questions, more especially to the second, that I wish to direct attention to-night. In the first place, does the experience gained in South Africa with regard to the treatment of injuries sustained from gunshot wounds in war lead us to modify in any way the rules which have been gradually formulated for the treatment of similar injuries in civil practice? In the second place, how far have the principles of modern surgery, and especially of asepsis been acted on, how far is it necessary and how far is it possible to act on them?

In considering the first question, we must remember that the character of the majority of the wounds inflicted with the new high velocity bullets, the period at which the patients came under treatment, and the climatic and other conditions under which the wounds were inflicted, are different from those which are met with in ordinary civil practice in this country. As regards the nature of the wounds themselves, the gunshot

* Delivered before the Midland Medical Society on November 7th, 1901.

wounds that we are most familiar with in civil practice are those inflicted with shot guns, sporting bullets, etc., and these differ from the majority of those inflicted with Mauser bullets essentially in the greater size of the skin wounds and in the greater destruction of the tissues along the track of the bullet. The chief wounds that are met with in civil practice, which correspond to the ordinary type of the Mauser bullet wounds, are those inflicted with small pistols. At the same time, in South Africa many wounds were met with, corresponding practically in all particulars to those of which we have experience in civil practice, such as the majority of those inflicted with the Martini Henry bullets, those in which the Mauser bullet was spent, or where it was travelling irregularly as the result of the worn rifling of the gun, and thus struck laterally or sideways, where the bullet was either split or dum dum, where it set up in the tissues or where it broke bones, or in the case of shell wounds. In this class of wounds I think we may say that our experience in South Africa shows us that the methods of treatment that are looked upon as the best in civil practice are also the best to apply to those wounds in war; and I would say that even in the case of small wounds the experience gained ought not to lead us to materially modify our practice in civil surgery, but that in all essentials the lines of treatment in the two cases should be similar. In fact, the rules for civil practice are the best to follow in war in so far as the circumstances of the case will permit.

The cases which were first published at the early period of the war led to quite an erroneous impression as to the best method of treatment of gunshot wounds, and one was almost inclined to believe that military surgery was something quite apart from civil surgery, and that one could not carry the experiences of the latter into the former. This is quite erroneous, and I would put the matter in this way: that the experience of military surgery does not lead us to alter our lines of treatment in civil practice, and that military surgery differs in the main from civil surgery in that from the circumstances of the case the treatment which

under the circumstances of civil practice would be regarded as the best can often not be employed. In military surgery one must often be content with temporising measures, which are, it is true, sometimes followed by remarkably good results, but which, were the conditions more favourable, could not be considered the best for the patient, and would in many cases in civil practice be condemned.

You are all of course aware of the very remarkable cases which have occurred during the campaign, and many of which have been published, cases in which bullets traversed regions without producing such injuries as one would have expected from the anatomical relations of the parts. I need not add to these cases here, for, except in the way of throwing light on the method in which the modern bullet traverses the tissues, they are more or less surgical curiosities. But if we take one or two examples of injuries in various tissues, I think we shall see that my proposition is a correct one, and that the thing to be aimed at in military surgery is to carry out as far as possible the rules which experience in civil surgery has shown to be the best.

Take, for example, the injuries of blood vessels. The patient receives a bullet wound which injures a blood vessel, with the result that the blood escapes in sufficient quantity from the wound to indicate that a large vessel has been injured. In civil practice, the rule would be at once to cut down and ligature the vessel above and below, and I think everyone would admit that that rule ought also to be carried out if possible in military practice. But in military practice that rule has to be modified very considerably, according to the circumstances of the case. In some of these cases the wounds were very small, and it was very remarkable how in a good many instances the bleeding came to a standstill, and the patient did not suffer from continued loss of blood; but later on false aneurysm, aneurysmal varix, varicose aneurysm, etc., developed. Indeed the proportion of cases in which these conditions of the vessel were present was remarkably large. The practice followed on the field was that unless in cases where the patient was actually bleeding to

death, it was best to apply pressure, and to try to arrest the bleeding temporarily in that way, and to send the patient off to the base. The circumstances under which operations can be done in the field are most unfavourable, and the after-nursing and treatment of the patient is not what one would consider the best after ligature of the main artery of a limb. The proper attention cannot be paid to the avoidance of pressure on the parts, the limb cannot be properly warm, the patient has probably to travel under the most trying circumstances, and the chances of gangrene of the limb resulting from surgical intervention at this period are considerable ; and, therefore, under the circumstances of the case, one must look on it as on the whole the best practice which could be carried out to temporise and to subsequently treat the false aneurysm or other condition which resulted from the wound. But that does not alter the rules of treatment of similar injuries in civil practice. I think that everyone will agree that in civil practice where the wound can be opened up with comparative safety, where good nursing can be obtained and the patient put at rest and under the best conditions, the proper treatment would be to open up the wound and tie the vessels at the seat of injury, in spite of the remarkable recoveries which have sometimes followed in the field.

Take again the bullet wounds of bones. In this campaign we have certainly learned that Mauser bullets, travelling at high velocity and striking the cancellous ends of bones or small bones, may drill a hole in the bone and pass through, and that subsequently the wound although not treated in any way may heal up without any trouble. And I think that in civil practice we would as a rule follow the same procedure in the case of a small pistol bullet ; that is to say, unless there was distinct evidence of the bone being splintered, or unless there was a large opening in the skin, we would simply disinfect the wound, put the parts at rest and await events.

On the other hand, where we have to do with a compound fracture of a limb with a large skin wound, our rule in civil practice is to make every attempt to render the wound aseptic,

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to remove any loose fragments, if necessary to drill and wire or screw together the broken ends, to provide proper drainage from the wound and to place the part at rest; and I think that this also should be the aim of treatment in the field in all cases where the shafts of bones are shattered and where the wound of entrance or exit is larger than the ordinary typical perforation made by the Mauser bullet. But in many cases this was not done in the first instance on the field, often owing to the circumstance of the case. There was either no time to do it or there were no lotions at hand for proper disinfection of the wound, or the patient had to travel immediately, within an hour or two, for some distance and so on; hence in many instances the limb was put up in a temporary splint, some sort of gauze dressing was applied and the patient was sent away. No one will I think doubt that although some cases recovered which were treated in this way that is no reason for altering the more thorough treatment which is adopted in civil hospitals. In my experience such compound fractures did badly as a rule. I have never met with one which was not septic and, although in some cases and in some situations the sepsis did not lead to the death of the patient, it nevertheless led to a suppurating wound, often to the extrusion of pieces of bone and to a prolonged recovery. On the other hand, a large number of these cases suffered severely from sepsis. I have seen several of them die of acute sepsis or acute emphysematous gangrene in the course of a very few hours or days after the infliction of the injury, and a large number of cases have been followed by osteomyelitis and have only been saved by amputation. No experience in this war has diminished our views as to the extremely dangerous character of compound fractures, especially of the comminuted form, and, although quite a number of remarkable cases have occurred where the bones have been extensively split up and where nevertheless rapid consolidation has taken place, these cases occurred in connection with the tiny perforations made by the Mauser bullet and fortunately sepsis did not spread in along the track. But in all cases of compound fractures I feel sure that still more energetic attempts

should be made on the field to follow the lines already adopted in civil practice, and probably under the circumstances of the case primary amputation might with advantage have been more often performed than was the case. In this respect I think that the excellent results obtained in the ordinary small wounds rather led one astray and induced the surgeon to think that the danger of gunshot wounds was less than was really the case, and thus I fancy that many bad compound fractures were treated conservatively, in which, considering all the circumstances of the case, such as the absence of proper disinfection, the subsequent transport of the patient and so forth, it would have been previously held to be better practice and would still be best to perform a primary amputation.

Speaking of wounds of bones one may also refer to injuries to the vertebral column which formed quite a considerable proportion of these injuries. In civil practice one naturally takes a very gloomy view of fractures of the spinal column, especially with regard to the question of treatment by operation. At the same time cases have occurred where improvement has followed operation in civil practice, but the reason for the unfavourable view that is taken is essentially the nature of the injury, for in the ordinary fracture-dislocation the injury is not limited to the bone but is accompanied by crushing of the spinal cord. In cases of gunshot wounds of the spinal column on the other hand, while in many cases the cord was no doubt injured by the bullet, in a very considerable proportion of cases the nerve lesion was due either to hæmorrhage into the canal or to pressure on the cord from fractured portions of bones, and I think that a very much larger proportion of instances of spinal injuries might have been operated upon with advantage than were, and certainly a very much larger proportion than in civil practice where the injuries are of a different nature. In quite a number of cases the cause of the paralysis was not direct injury of the cord but was pressure on the cord of fragments of bone, the bullet passing through the body of a vertebra for instance driving portions backward which did not actually pulp up the

cord, but kept up pressure on it, and similarly bullets which had struck the posterior portion of the vertebral column depressed the laminæ and spinous processes so that they projected on to and pressed against the cord. Hence in cases of gunshot wounds of the spine, I think one ought most carefully to look into the matter from the point of view of operating, more frequently than is the case in civil practice. In these cases the conditions for operation on the field and for the first few days after the injury are not favourable, and yet it is just at that time that the best results would naturally follow. Here again I think that an attempt ought to be made to improve matters so as to lead to the possibility of early operations. The same holds good as to gunshot wounds of the skull which require immediate trephining if the patient is to have the best chance.

To mention one more example, we have the question of gunshot wounds of the abdomen, in which at first sight one was inclined to think that the experience gained in South Africa had thrown new light on the treatment, and might very likely modify the rules which had been laid down in civil practice. The rule in civil practice in all cases of penetrating wounds of the abdomen is that the abdomen shall be opened at once, and that careful investigation shall be made as to the existence or non-existence of injury to the contained viscera, and in this war one of the chief points to which one looked forward for increased saving of life as a result of modern surgery was by early abdominal operations and the consequent repair of intestinal wounds. It was however very soon found, probably in the first instance from want of opportunity of opening the abdomen under these circumstances, that a considerable number of cases of perforating wounds of the abdomen recovered without any bad symptoms, and as case after case began to arrive at the base hospitals with this history the idea very soon arose that the rule as regards opening the abdomen in cases of penetrating wounds would have to be considerably modified. From the position of many of these wounds it was held to be practically impossible that the bullet could have traversed the abdomen without injuring the intestine, and yet, nevertheless, recovery took place

without operation. When I went to the front I was thoroughly impregnated with this view, which had been instilled into my mind on all hands, viz., that perforating wounds of the abdomen and perforating wounds of the intestine with Mauser bullets very often recovered and, were on the whole not among the most serious of the injuries which occurred, and that the whole principle of abdominal exploration in these cases would have to be reconsidered. I must confess that my experience, when I came to see a number of these cases, to begin with at Paardesburg and later at Bloemfontein and Karree, etc., very quickly disillusioned me on this point, and with rare exceptions I found that where there was distinct evidence of injury of the intestine the great majority of patients died of septic peritonitis, just as our experience in civil practice had shown that they would do, and that, provided the conditions for operation were favourable, practically the only chance the patient had, in cases of wound of the intestine as the result of a bullet, was by operation. When we come to consider the remarkable course which bullets follow in their passage through the body without causing any injury it really is not very surprising that the slippery intestines should slide away from the bullet in its course and not be injured by it, and it will be found that most of the fatal cases which occurred showed injuries of the more fixed portions of the intestine, such as the duodenum, the cæcum and the ascending and descending colon, rather than injury of the small intestine. And one or two *post-mortem* examinations, notably one by Mr. Cheatle, have shown that one may have in a transverse wound across the abdomen injury of the cæcum on the one side and of the sigmoid flexure on the other, and no injury whatever of the intervening small intestines. I think that, taking everything into consideration, we must hold that with very few exceptions the cases that recovered after penetrating abdominal wounds were cases in which there was no perforation of the viscera.

I have already published the only statistical list that I have been able to come across, namely, the results at the action at Karree, where fifteen cases were wounded in the abdomen.

Five of these died within twenty-four hours, five more died within two days, leaving five still alive at the time when I left Karree. I heard afterwards that one of these five subsequently died, leaving a recovery of four, and in none of those four was there any evidence, such as hæmorrhage from the bowel, vomiting of blood, etc., that the intestine had been injured. Indeed in one of them at least I should have said from the first that the probability was that the peritoneal cavity had not been entered at all. These statistics I believe give a fair idea of the result. Now and then, no doubt where a bullet is travelling at high velocity and simply makes a small puncture of the intestine one may have recovery, and cases have certainly recovered where there has been no question as to the wound of the intestine,—cases where subsequently there has been communication for example between the bladder and the rectum, cases where a localised peritonitis has occurred, followed by an abscess, and that again by a fecal fistula; but in cases of absolutely uninterrupted recovery without any symptoms, I very seriously doubt whether there has been any wound of the intestine at all. On the other hand, I fully admit that under such circumstances as the length of time that has already elapsed before the wound had come under notice, the disturbance which has followed in the transport of the patient, the great difficulties under which an abdominal section would have to be done on the field, etc., the chances of successful operative intervention are very slight. One of the points in doing an abdominal section in civil practice is that if we do not find a perforation we feel we have done the patient no harm, but this cannot be said to be the case in the field, and if an abdominal section is done under the circumstances that exist there the probability is that we do add greatly to the patient's risk owing to the great difficulty of proper aseptic treatment. So that under all the circumstances, I do not see much room for improvement in future in the treatment of abdominal wounds, except in so far as some attempt must be made in these cases to leave them at the place of injury and not transport them to

the base. The transport to the base in the case of a perforating wound of the intestine will very often convert the possibility of recovery into a certainty of death. But except in the direction of providing more complete and perfect rest, and rectal feeding, in a way in which it was not provided for in this campaign, the outlook as regards the application of the modern principles of surgery to abdominal injuries does not seem at all favourable. The point, however, which I wish to make is that in none of these cases can we say that experience gained in the field should lead us to any revisal of the methods of treatment which have already been deemed the best as the result of our experience in civil practice.

We may now pass to the second question, namely, the application of the modern surgical principles of wound treatment to the management of wounds in the field, and inquire how far these principles have in reality been applied, and how far they are capable of application. This is a point of the greatest importance because we have to determine what lines of treatment must follow in the future, and whether we are to pursue the same direction as in the present instance, or in what other directions we should strive for improvement.

This is the first great war in which we have been engaged in recent years since the introduction of the modern small-bore bullets and of Listerism, and it is most important that we should review the methods and results from every standpoint with the object of seeing what errors have been committed, how the results might have been improved, and what lines should be followed in future.

I have seen it repeatedly stated that this war exemplified the enormous advances and value of modern surgery, and especially of the Listerian principles in the treatment of wounds. That is a very nice sentiment and one which naturally meets with great applause in an after-dinner speech, but it is well to inquire if it is really accurate. I have already pointed out that in my opinion the treatment of the injuries sustained in certain parts of the body on the field of battle is not up to the requirements

of modern surgery, and, so far as I can see, cannot be brought up to the requirements of modern surgery owing to the circumstances under which these injuries occur. I do not think that we can in any fairness attribute the recoveries in the very remarkable surgical curiosities which have been published, or in abdominal and other penetrating wounds of large cavities, to the application of the modern advances in surgery; nor do I think that we can attribute the results of wounds generally to those advances and more especially to active Listerism.

In considering this matter of the relation of the results to the treatment adopted, we must divide the treatment into two stages, namely, that which takes place in the field and that which is carried out at the base hospitals, and my statement only applies in so far as regards the treatment of the patients in the field before they arrive at the base hospitals. When the cases reached the base hospitals the value of the recent advances in surgery at once came into play, and the results from that period onward were of course incomparably better than they would have been before these recent developments had taken place. But in the first class of case, namely, those treated at the front, I believe that modern surgery and active asepsis had very little to do with the results, and in my opinion these results are mainly attributable to the character of modern bullet wounds, and to the climate in which these wounds were inflicted. In fact I would go so far as to say that if these wounds had been made with the old round bullet and in a damper climate (say in the Crimea) the immediate results under the methods of treatment adopted in the field would not have been so very much better than those formerly obtained, in spite of the recent advances in surgery and the introduction of Listerism. Perhaps this is going a little too far, because, although I cannot attribute the results obtained to any active application of the advances of modern surgery or of asepsis, still the treatment contributed considerably to the result in that while in former days wounds were meddled with, probed, opened up, poulticed, and so forth, in the present campaign they were left alone and mischievous interference was avoided. Probably the small size and apparently trivial character of the

wound led to the plan of leaving it alone in the first instance, and this plan was further necessitated owing to the large number of wounds which occurred in the early battles, the consequent difficulty of finding time to open up these wounds, the small personelle and the other difficulties to which allusion will be made ; and, no doubt, added to this there is unquestionably a diminishing tendency to interfere actively with wounds as the result of the experience of modern surgery. But this is a different matter from saying that the results obtained were due to modern surgery and asepsis, in so far as that implies an active application of those principles.

It is only necessary to consider the circumstances under which a man is wounded and the various steps which have to be gone through before he reaches the Base Hospital in order to see how extremely difficult it is to apply modern surgical principles in the early treatment of these cases, and it is only by the study of these conditions that one can hope to lay down lines for progress in the future.

Let us look first at the conditions under which a man is wounded in the field. He is probably lying on the ground, perhaps behind a stone or an ant-heap, and all around him there is a shower of bullets which renders it quite impossible for anyone to walk up and attend to his wound properly or to carry him off the field and have him attended to at the Dressing Station. He must lie where he is till the action is over, or at any rate till it has passed away from his vicinity, and the only assistance that he can get in the first instance will be either by his own efforts or from a comrade, or from the regimental doctor, who makes his way to him as best he can and naturally as unencumbered with apparatus and paraphernalia as possible. Under these circumstances what happens to the wound? He goes into the fight provided with what is called a "field dressing," which essentially consists of a small piece of antiseptic gauze, a piece of wool and a bandage. The gauze is quite small in amount and if there is any bleeding going on it very soon becomes saturated with blood, and to begin with it contains such a small quantity

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of antiseptic material in it that the blood passing through it is not in any way deprived of the possibility of putrefying, so that this little dressing, as arranged in the packet which accompanies each soldier, is more a sort of clean rag than any actively antiseptic dressing. But under the circumstances in which it is employed it is very far from being even a clean rag. If the soldier or his comrade attends to the wound, they open this packet, their hands are covered with mud and sand and grease, they take out this piece of gauze with their dirty hands, very probably they lay it down on the ground while they are getting the clothes opened, and then they stick this piece of dirty gauze on the wound. And even if the dressing is made by the doctor the conditions are practically no better. He cannot carry bottles of lotion with him into the firing line, he cannot even wash his hands, and though perhaps he may take a little more care that the piece of gauze does not get badly soiled, yet even in his hands, with the greatest care, this dressing is by no means an aseptic dressing, and to speak of it as an aseptic dressing or to speak of such treatment of a wound as in any way an active application of Listerism is of course an absurdity.

In a good many cases the man now lies on the ground for some considerable time, perhaps even for hours, exposed to the heat of the sun, and by the time that he reaches the Dressing Station or the Field Hospital the blood and dressing very often form a dry hard cake over the wound which requires some little force to detach, and in many cases of small bullet wounds if this cake of blood and gauze be left undisturbed for some days, it will be found when it comes off that healing has occurred under the scab. When the patient has arrived at the Dressing Station, even in cases where it is essential that the wound should be re-dressed, and where, therefore, the opportunity for thorough disinfection is presented, practically little or nothing is done in that way, mainly of course owing again to the circumstances of the case. At the same time I may say that I did come across a few men who, in spite of the circumstances, made a fairly efficient attempt to carry out disinfection of the wounds as soon as they

came under their care ; but in the majority of cases the lotions at hand were quite insufficient and inefficient, and practically no real disinfection was carried out.

In the circumstances of the present war the chief obstacle to the thorough treatment of wounds at the front was connected with the water supply. In the first place the supply of water was deficient and the ponds were considerable distances apart, and it was by no means always possible during an engagement to arrange that the field hospital should be in such a position that an ample supply of water was obtainable. In the second place even if this difficulty were overcome the water was invariably bad and so extremely muddy that even after precipitation with alum the filtration was extremely difficult. In fact a great deal of time and labour was required in the attempts to filter the water, for such filters as were efficient, such as Chamberlin's and Berkefeld's filters, very quickly became clogged with the mud and had to be repeatedly taken out and cleaned. One can easily understand that with a staff that was undermanned and working under high pressure it was difficult to find anyone who could be told off to collect and filter water, besides which the filtering of this water, on account of its muddiness, was a very slow process, and thus only a small quantity could be obtained in a given time. The third difficulty was the impossibility of obtaining boiled water. In the early stage of the campaign the transport was so cut down that only the number of kettles necessary to prepare food for the patients was provided, and there were no extra kettles available for boiling water for operation purposes, and further the obtaining of fuel was a very great difficulty. The country itself is devoid of fuel, the absence of trees renders one dependent on the stray pieces of wood that one can pick up, such as the posts of wire railing, enclosures round the houses and so forth, and the staple fuel used in that country is cow dung which was not always obtainable.

It is thus evident that during the progress of an engagement, if lotions and sterilized water had not been made ready before-

hand, it was really quite impossible to obtain the proper lotions or even for the surgeon or the attendants to keep their hands decently clean. In many cases no lotions were available at all, or if they were they consisted of some muddy water into which a little carbolic acid or sublimate was introduced,—lotions which I believe were quite incapable of destroying even the most delicately constituted bacterium. Hence, in cases where it was thought advisable to change the dressing, there was no proper disinfection of the skin around the wound. Indeed, in the majority of instances another piece of gauze, which was very often, owing to the amount of dust and sand in the air, and the absence of water to enable the surgeon to wash his hands, nearly as dirty as the former, was put on, and this could very seldom be described as an aseptic dressing.

The difficulties of aseptic work were also much increased by the amount of sand and dust present in the air. The veldt, though in the spring-time covered with grass, does not possess a closely-knit turf as in this country; the condition is more a series of tussocks of grass with sand between, and after the ground has been passed over by wagons or by soldiers these tussocks very soon become destroyed, and the whole ground is converted simply into a sandy desert. Hence the air was always full of sand, and with a little wind there were constantly dust-storms, so that the dressings and other materials became saturated with this sand. And, lastly, flies were extremely troublesome, especially where the camp was near water, and these were constantly trying to settle on wounds when they were exposed to view, and, of course, interfered with the aseptic arrangements.

I have said nothing as yet as regards another very great difficulty in carrying out the requirements of modern surgery, namely, the question of the transport of the patients to the base hospital. The wounded when they were brought back to the dressing station or to the field hospital were not put in comfortable beds and allowed to remain until their wounds were healed. In many cases, indeed, only a few hours elapsed and they were then

again put into an ambulance wagon or an ox or buck wagon and carted off either to the nearest Base Hospital or to the nearest point on the railway line, from whence they were transferred to the base. In some places, such as Paardeberg, these journeys of the recently wounded in ox wagons lasted for two or three days. One can easily imagine how deleterious such transport was, and what such a journey would mean to a patient with compound fracture of a limb, or with a fractured spine, or an abdominal injury, or a fracture of the skull, and no one can be surprised to learn that deaths in these cases frequently occurred during or as a result of the journey. The conditions were not so bad where the engagement occurred in the immediate neighbourhood of a railway line, and where the wounded could be quickly transferred to a well-appointed hospital train, but even there they had to suffer in the transit over the rough veldt.

That the results could not have been obtained if the wounds had not remained aseptic is of course self-evident, but the point is that this sepsis was not brought about by the surgeon, but depended on the climate and the nature of the bullet wound. It must not, however, be supposed that bullet wounds invariably escaped sepsis. On the contrary, a considerable number of cases even of the small wounds inflicted by a rapidly travelling bullet had suppuration along the track. In these cases, although so long as only soft parts were injured this did not matter very much, nevertheless, when bones were broken necrosis and other troubles were apt to follow. In cases, however, where the wound was an inch or larger in size in my experience sepsis invariably occurred, and though many of these wounds healed ultimately well enough when they reached the Base Hospital early, I have seen some extremely rapid cases of acute septicaemia and emphysematous gangrene, and in many cases severe and prolonged suppuration with osteomyelitis, and some were only rescued by early and high amputation.

The explanation of the escape of a large number of the cases of small bullet wounds depends, as has been already said, partly

on the nature of the wound inflicted by the bullet and partly on the climatic conditions under which the injury took place. Wounds made with these small conical bullets vary a good deal in their character. On the one hand, if the bullet is travelling rapidly and strikes straight and either passes through the soft parts or through the cancellous ends of bones, it generally makes only a small punctured wound of entrance and a slit or small wound of exit. On the other hand, when the bullet is spent it may strike sideways or obliquely, just as it may also do in a case of ricochet; if the rifling of the gun is worn it may also strike obliquely, or if it strikes the shafts of bones and breaks them up, it may produce almost an explosive wound. In all these cases a larger wound is produced. The great majority of wounds however are, as has been said, very small and differ very markedly from the old wounds with round bullets. In the first place these bullets seldom take in any portion of the clothing, so that the wound does not become soiled from this cause, and apparently also the bullet seldom takes in any septic material. The most frequent cases where that occurs are where the bullet passes through stockings, flannel shirts, etc. Again the aperture of exit is not larger than that of entrance as used to be the case, and the injury to the tissues in the shape of bruising is usually comparatively slight. In fact, in many cases the tissues are not so much bruised as pushed aside by the missile. The consequence is that the wound is as a rule quite small, there is no cavity in the interior because the muscles are separated rather than divided, the sides of the wound come together at once, and these sides are fairly healthy. Hence, unless in cases where the bullet has carried in septic material, or where the skin and the part injured are very septic, the majority of the wounds heal without any trouble.

But as important as the size and nature of the wound are the conditions under which it is inflicted. I need not recall to your minds that a certain and large amount of moisture is necessary for the growth of bacteria, and that the concentration of organic fluids is one way of preserving them. Nor need I point out

that healing by scabbing, which is an old and long recognised method of healing acts on this principle, the blood drying up and becoming concentrated before the bacteria have had time to grow in it. This principle has been recognised for many years, and various attempts have been made to promote the rapid scabbing of wounds by powdering them, by blowing air on them and so forth. Now in South Africa the climate is especially advantageous in that it promotes rapid drying up of the blood effused, and healing under a scab. The excessive dryness of the air and the heat of the sun contribute to this result in a way that can rarely be found elsewhere and this was more especially the case seeing that the bleeding from these wounds was generally quite slight, so that only a small quantity of blood had to dry up. The antiseptic dressing and the surgical treatment adopted had little or nothing to do with the result in these cases, and the only way in which we can bring in modern surgery as of value is because it has taught us the meaning and value of healing under a scab, and has shown us that unless the wound can be made thoroughly aseptic the less such a scab is disturbed in the first instance the better. That the essential elements in these wounds are the bullet and the climate is shown by the following facts:—In the early stages of the war the field dressing which was provided contained a piece of mackintosh which the soldiers were instructed to apply outside the gauze. When this was done, however, it was found that sepsis and suppuration frequently occurred along the track of the wound, and I have seen a number of cases brought in only a few hours after the infliction of the injury dressed in this way and have found the gauze and discharge stinking and of course entire absence of scabbing. This was observed quite early in the campaign, and from that time orders were issued that the mackintosh was not to be used. But this very fact shows that the drying up of the discharge and not the antiseptic dressing was the important factor. It was also observed that those cases did best where the wounded lay out in the sun for a long time before they could be brought in and where therefore

a rapid and very dry crust formed. The size of the wound has naturally also a good deal to do with the result. Where the wound was too large or the effusion of the blood too great to permit of the formation of a rapid crust, sepsis was almost certain to occur, and as I have just said I have seen some very severe septic cases under these circumstances; indeed I have never seen a wound of any size which was not septic. And we must remember that the great majority of deaths which occur a few days after an action result from sepsis of the wounds, so that the results as regards sepsis where we consider cases of large wounds without crust formation are by no means so favourable as one would at first think when all the cases are grouped together.

It was thus evident from all that has been said that we were dependent for the success which followed in this war in so far as the treatment at the front is concerned, not on advances in surgical science, but on the merciful nature of the modern bullet wound and on the climate in which the fighting took place; and, as I said before, if a larger bullet were used, and if the fighting took place in a moist climate, we could hardly expect anything like similar results. The question therefore arises—On what lines should the treatment of wounds be carried out in future?

It is quite clear that in no case can we hope for real asepsis from the first. The chances of getting the wounded out of the firing line are quickly becoming less and less; indeed the wounded themselves are very much safer if they are left alone, provided they have any protection at all, for they run a great risk of being killed or wounded again if an attempt is made to carry them out. Further the surgeon in the field cannot carry about lotions or water to wash his hands, and the first field dressing must in a large number of cases be applied by the patient or his comrades. So that till the patient reaches the dressing station at any rate, and very probably the field hospital, there is no possibility of carrying anything like active aseptic treatment into force, and some considerable number of hours may have elapsed before the patient comes under these

conditions. It seems to me, therefore, that it is only in the way of aiding the principle of rapid drying up of the blood and obtaining a good scab that we can help matters in the first instance, and the only way in which I see that we can do this is to resort to the attempts to promote scabbing and prevent decomposition by the free use of antiseptic powders and by the free exposure of the wound to air and sun. The object of these powders would be partly to absorb moisture, and therefore tend to make a cake, and partly also, being antiseptic, to impregnate the blood with such a quantity of antiseptic material that bacteria cannot grow in it. The first point is the most important. As to what powder should be used, that is a matter that would need to be worked out, but I think that powder would be better than pastes, especially if these contained gummy materials, because the drying up of the blood would occur more quickly, and of course the use of anything in the shape of ointments would be to give up the whole principle of scabbing, and would not I am sure meet the requirements of the case. I think if, in addition to the cyanide gauze, there was in the field dressing a packet of antiseptic powder, which the soldier was instructed to open and sprinkle over the wound before applying the gauze, or if the gauze itself were full of loose powder, considerable help would be obtained. Further, the regimental surgeon, although he could not carry antiseptic lotions with him, might quite well carry a quantity of antiseptic powder, and dust the wound with it before applying the dressings. I tried this when I first went out, and furnished various Bearer Companies with pepper-boxes containing various antiseptic powders of different strengths and kinds, but, owing to the ever-changing position of the Bearer Companies, I never knew what the result was, or indeed if they had ever been used. This is a point which I think might well be looked into by the authorities.

The question of a proper supply of water and lotions must be also thoroughly gone into. In such a country as the

Free State it is clearly essential to provide the lotions and water before the engagement. In the case of an engagement one cannot always find a supply of water near which the dressing station or field hospital can be pitched, and, even if it is found, it is sure to be muddy and require filtering and boiling—conditions which, as I have already mentioned, are quite unattainable. It is true that water carts accompany the hospitals, but one of the most distressing symptoms of the wounded is thirst, and the water in the water-carts must be reserved for drinking purposes, and is often indeed quite insufficient for that. It seems, therefore, that it is essential that arrangements should be made by which the field ambulances and Bearer Companies can carry into action a quantity of water which has been filtered and boiled, and lotions which are ready for use, and I do not see that there can really be any serious difficulty in doing this. After we left Bloemfontein I was provided with an ambulance cart of my own in which I carried an operating tent and all the requisites for performing operations, and I made a point of having at hand a number of rum jars which were kept filled with strong lotions, which could be diluted as required. I also had a jar full of swabs soaking in lotion and a large eight gallon tin which I always kept replenished at every opportunity with filtered and boiled water. It really took very little time to keep these vessels replenished, and one was always ready for any reasonable emergency. If I could do this with the limited assistance and transport at my disposal, I see no reason why it should not also be done in the Bearer Companies and Field Hospitals. Although in many of the ordinary small wounds it is best not to disturb the crust, if a good crust has formed, still in larger wounds the only chance of avoiding sepsis is by thorough disinfection of the skin and wound as soon as possible.

One other point to which I would call attention as interfering with the application of modern surgery is the difficulty in illumination in the operating and other tents. As a rule, it is

night before the wounded can be brought in and attended to; at any rate in most of the cases which I saw the dressing and operating work had to be done after dark. In our Field Hospital the arrangements for illumination were very imperfect and usually consisted in illumination with candles which either had to be held by an orderly or, owing to the small staff, had to be stuck in a dirty lantern or on a bit of wood. The only two abdominal sections which I did were both done late in the evening with the aid of a candle stuck in a piece of wood and placed as near the wound as possible. In several of the foreign ambulances the acetylene light was provided and in the cart which I organised at Bloemfontein I was fortunately able to procure and carry with me a small acetylene generator which gave the most brilliant illumination. I would call attention to this point, because I do not see that there can be any great difficulty in providing illumination of this kind to the various Field Hospitals, and it is a matter of the very greatest importance. For a Field Hospital to go into action without lotions, without water, without means of boiling water, or without proper illumination, is just as bad as for guns to go into action without proper fuses for the shells, or for the men to use black powder. These things are absolutely necessary equipments for the work, and if additional transport is required for them it must be provided.

One other question arises with regard to the better treatment of the wounded, and that is the question of the necessity of transporting them to the base. The ideal treatment would be to arrange for the Field Hospital to be left on the field of battle, and for the patients to be retained there till it was safe for them to be transported to the base. Certain difficulties, of course, arise in this connection, more especially the difficulty of feeding the sick, and also of providing sufficient attendants. In a civilised country one can hardly believe that the enemy would interfere with these Field Hospitals, and there is really nothing in the conduct of the Boers in the present campaign to lead one to suppose that they would do otherwise than treat

such field hospitals, if found, with consideration. It is true they might take the wounded prisoners afterwards, but that is a minor matter, and it seems to me that it would be worth while to attempt to come to some agreement among the nations by which field hospitals might be left on the field of battle, and furnished with suitable supplies and medical comforts. Of course, in connection with that another difficulty, which would arise in the present state of our Army Medical Department, namely, its undermanned condition, would render such an idea impossible. To drop field hospitals all over the country, with suitable attendants, would very soon deplete the service, and leave no one at hand to go forward with the army. Something of the kind, however, would be extremely important, and no one who has realised the sufferings of the patients in this campaign from the early transport, and the loss of life and limbs which have consequently ensued, will doubt as to the advisability of some plan of this kind. It is to be hoped that the efforts which are being made to improve the conditions of the service will attract a sufficient number of suitable men to allow a reserve supply for purposes of this kind to be available.

If once these requirements were attended to, notably better arrangements to prevent sepsis in the first instance, proper supplies of lotions and boiled water, proper illumination, diminished necessity for transporting the wounded to a distance and increase in the personnel, we could then look forward to a more efficient attempt being made to carry the advances of modern surgery into military practice. More especially more efficient efforts could be made to disinfect and treat bad compound fractures, to see that all cases of wounds of the skull were trephined as early as possible, to open the abdomen in cases where the wound was over a fixed portion of the intestine, and where therefore injury of the tissues was probable, and so on.

There are a number of minor points in the treatment of wounds in the field and in the furnishing of Field Hospitals which

I need not go into. I think that all these questions of wound treatment should be considered by a properly constituted expert Committee. In the meantime I have said enough to show that in this matter, far from having reached finality in the treatment of wounds in war, we have hardly begun to bring modern surgery to bear on the subject. The details in this respect are as important as the larger schemes which are occupying so much attention at the present time, and without attention to them these schemes would fail to effect the ultimate object for which they are proposed, namely, the diminution of suffering and the saving of life in war.

AN ADDRESS *
ON
EXAMINATIONS AND THE EDUCATION
OF THE SPECIAL SENSES.

BY THOMAS BRYANT, M.Ch., F.R.C.S. ENG. AND IREL.,
SURGEON-IN-ORDINARY TO THE KING ;
CONSULTING SURGEON TO GUY'S HOSPITAL :
PAST PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, ETC.

Mr. President,

You have but recently enjoyed the first Congregation of your ideal University and had the benefit of learning from your distinguished Principal the history of its birth. You have likewise had the benefit of hearing from your no less distinguished Chancellor and Father of the University the clear enunciation of the principles upon which the institution has been founded, with an eloquent expression from his parental lips of the brilliant career which it is anticipated the University will run in the coming ages.

As an interested worker and dweller in a city older than Birmingham, which is now seriously and strenuously occupied in working out the problem of turning a mere examining University into a teaching one for a population many times larger than your own, I have studied all your proceedings, and as the President of your Clinical Board has been so kind as to ask me to distribute the Clinical Prizes to the Students of this Hospital on this the first occasion since Birmingham received a Charter for its

* Delivered at the Queen's Hospital, Birmingham, on October 18, 1901, on the First Distribution of Clinical Prizes since the University commenced its work.

University, I may be pardoned for making a few remarks upon your ideals and hopes of future developments.

First of all I must congratulate you upon having adopted in your modern institution the high ideals of the venerable universities of this country of which we all are so proud. It was a wise decision for you to have taken, for to build upon such a solid basis, your foundations must be firm, and by so doing opposition will certainly be disarmed against your efforts "to strike out some new path of distinction which will be not unworthy of their companionship." For the founders of your University have clearly been alive to the fact that different stages of human progress call for changes in new as well as in old institutions, so as to adapt them to the requirements of the times in which they live.

To lay down in the first place the principle that in such an ideal institution as this "all existing knowledge is to be taught" was absolutely correct, in spite of the probability that in carrying it out great demands may be made upon your resources, although you have good reasons to anticipate a realisation of your ideal, based upon past experience and the unprecedented success which has attended the foundation of your University.

The second feature of your ideal university—"that it is a place where the knowledge which has been acquired has to be tested"—is as sound as the first, although in carrying out the principle much discretion with care is needed, for whilst all will admit that too many examinations encourage cramming and discourage individual effort, such examinations as are given should always be searching. Periodical class-testing by teachers may be wise and necessary in order to mark progress, but all examinations, and particularly oral examinations, for degrees and honours should be undertaken by outside professors of experience in the presence and with the assistance of the university teachers. As an examiner of some experience and as a visitor of examinations conducted upon methods widely differing, I have no hesitation in expressing my conviction that whilst with every method of conducting examinations wrong decisions will

occasionally be given, the chances of giving them are unquestionably far fewer by the method I am now advocating than they have been where the examinations have been entirely conducted by the teachers themselves. By any and every method of examination good or well-prepared men and badly-prepared men can be recognised with equal facility, whereas with the intermediate and largest class, which includes the indifferently-prepared student, the difficulty of decision is always great. With such a class it may be true, as I have heard it stated, that the greater popularity of the teaching examiner over the outside examiner is not open to a question, and as a visitor of examinations I can well understand why such a consensus of opinion should exist, for I could, if I deemed it prudent, afford you much food for thought and some amusement by recording incidents illustrative of such methods as might seem to explain the student's view. But, seriously, is it a true subject of congratulation for an indifferently-prepared student to have just scraped through his examination? and is such a success a true subject of congratulation from a university point of view? From both points of view I unhesitatingly answer that it is not, and in saying this I have from the university standpoint the support of your Chancellor when he stated: "I conceive that common prudence should teach us to keep up the value of the degrees which we have begun to confer to-day, and nothing would be more unwise, more fatal to our reputation and to our ultimate success, than that we should endeavour to multiply the number of our students at the expense of their quality." From a student's point of view the same conclusion has to be drawn—at any rate, from the point of view of the medical student—for is it not true that many an indifferent student has developed into a good one by some throw-back for six months upon extra study? And that which was at the time looked upon as a calamity not only gave an impulse to efforts that had been half-hearted or torpid, but had helped to develop a character of a higher order and had rendered a successful career in life more certain. For my own part, when, as an examiner, a student whom I knew to

be a good one was rejected in a pass examination my sympathies were more with his parents than with the pupil himself, who, in spite of his throw-back with its disappointments, had been given one more chance of taking advantage of his opportunities of gaining knowledge and experience in medical matters in his medical school which he was not likely to have again, for experience has certainly proved to me that from a student point of view a temporary rejection is not always a matter to be lamented, since by it many a feeble man has been made strong and powers have been developed in him which have proved to be of lasting value.

With respect to the third feature of your University I can give nothing less than my warmest congratulations; for to start the University and maintain it "as a place where knowledge is to be increased and where the limits of learning are to be extended" is a noble ambition; and when this object is to be sought by uniting the students with their teachers in the work of fresh and new investigation your aims are almost those of perfection, and if eventually they are but imperfectly realised they must prove a success.

Lastly, we are told that your University is to be a place where the application of knowledge must be indicated and directed and that theory and practice are to be combined with due regard to the needs of your own time and of your own district, and that to carry out these wisely-conceived and well-considered objects you look with confidence to the help of your fellow-citizens. That you will not look in vain for this assistance is my firm belief and hope, and if you as the medical faculty of this enlightened University can but secure, in the words of your Chancellor, "the establishment of a great school of medical research which could carry forward and apply the discoveries of the last few years—discoveries which indicate to us, at any rate, the direction in which we are to seek for the weapons wherewith to combat suffering and misery and disease," you will, indeed, excite the envy of all rival institutions, for if theology is what it is said to be by the Bishop of Calcutta, "the queen of the

sciences, because of the power of her facts as applied to human life and its needs," surely the profession you have adopted must claim to be the king, since it is the one art and science which is utilised for the special benefit of mankind and which culls from every branch of human industry and knowledge anything and everything which can possibly have a beneficial influence upon the prevention, relief, or cure of human suffering or disease. Under such circumstances, how wise it is that this faculty of medicine should be part and parcel of a university which is based upon the four leading principles upon which I have commented and where all knowledge is taught, tested, increased, and applied.

There is, however, one important branch of education which your teachers, however skilled, can do no more than encourage and which consequently must be left practically in your own hands. It can neither be imparted by lectures nor acquired by reading "through the spectacles of books," and yet it is without a doubt the chief accomplishment upon which your success in this University and later in the practice of your profession will unquestionably depend. I allude to your individual power of intelligent observation, through which your personal experience must be acquired, as secured by the education of your special senses of sight, hearing, and touch with your powers of reflection upon the facts which your senses have supplied you. I should add that if a student cannot be taught this he can be educated to acquire it by those responsible for his education.

How the senses are to be educated is a personal matter; if they have been partially trained or disciplined in early life by the study of some branch of natural history after the manner of John Hunter, or in one of our public schools where science is recognised, as may have been the lot of a few of you, you will under either of these circumstances have gained an advantage of great value over your fellow-pupils who have been less fortunately placed, for such will soon have discovered how difficult it is, even in early manhood, to make up for the deficiency of their

primary education ; and yet it has to be done ; for as medical students you will have found out that to gain any success worth having a degree of keenness and adaptability of sight, hearing, and touch, is absolutely essential, and that to acquire eminence such keenness must not only be of a high order but it must be associated with an intelligent appreciation of the tact observed. To attain the degree of intelligent observation which is so essential for the practitioner of medicine may be a task of difficulty. Some students never acquire it. Those who do so in a high degree are amongst the best, but there must be many degrees of efficiency, and I want to help you in the solution of this problem out of the somewhat extensive opportunities I have enjoyed of teaching, testing, and investigating, and in so doing I must ask my younger hearers to put into practice what I may suggest and your younger teachers by testing your capabilities to help you in your efforts. To my senior hearers I venture to apologise for having taken upon myself under present circumstances the rôle of a teacher and to ask them to explain my action by the confidence I have in the value of the recommendation I am about to bring before you. In your hands, however, I feel sure of support, for your experience will certainly justify the action I am now taking.

As scholastic conditions exist at present the education of the senses has in school life, unfortunately, been left to chance, and no special means have been introduced into school routine for their education. In university life the introduction of some branch of natural science as a preliminary subject of study has been an educational advance of great importance, not only as an introduction to the knowledge of Nature's works, but as a means of demonstrating the value of modes of investigation which are applicable to every branch of human research. Under all circumstances, however, the education of the special senses should be a leading object of all teachers, and the best way of carrying out this purpose in medical education is by testing the student's capabilities. The bulk of the work, it is true, must be

left to the students themselves, but still they can be encouraged, and by being so will surely be materially helped. A medical student may watch with every care an able teacher in his endeavour to unravel the intricacies of a complicated case of disease, but he will not gain much by his observation, for he cannot see, hear, or feel with his teacher's senses, but can only do so with his own; and when he has advanced far enough to consider the meaning of a diagnosis he will have discovered that a reliable one can only be the outcome of a correct observation of the facts of the case as brought out by his own observation and the conclusion of sound reasoning upon the facts themselves.

How, then, it may be reasonably asked, is a student to learn how to make the best use of his senses for medical purposes? There is but one answer, and that is by steady and prolonged practice—and this practice must be established on a method. Let the student, as a rule of life and as a matter of routine, habitually begin his investigation of every case by looking well at his patient *as a whole* and subsequently in detail, and as he progresses in the powers of observation he will be astonished and pleased to have discovered how much may be learnt by a look and how valuable the intelligent look has been. In local injuries and diseases let him follow an equally valuable routine practice and as a matter of habit invariably compare the injured with the corresponding uninjured part, and having noted the facts observed with the points of difference in the two sides of the body let him reflect and reason upon the value of the facts—indeed, upon the value of each fact. By such a routine practice a provisional diagnosis may have been reached which has either to be supported or refuted by subsequent inquiries into the history of the case and any other facts which may have been elicited by manipulation and the sense of touch. In all cases let sight lead the way and touch follow, reflection governing the whole. In a large number of cases it will be found that the objective facts elicited by sight are alone enough to suggest

a diagnosis, which has only to be supported by the points afforded by the history of the case and the facts brought out by manipulation and palpation. In local injuries or diseases a student is too apt to commence his examination of a case by manual methods, much to the detriment of his patient and his own discomfiture; this natural but inefficient routine ought not to be allowed, for as a rule a good inspection of the injured or diseased part and its comparison with the sound side will supply suggestions as to the nature of the case which will only require the gentlest manipulation of the surgeon to confirm, the diagnosis of the case being based upon the facts seen and felt, the history of the case, and the exercise of thought upon the facts. Examiners will greatly help the establishment of this habit of investigation by asking pupils primarily to look at a case and describe what they see before they are allowed to use their hands. I would suggest, in order to assist self help in the education of sight, that house surgeons, fellow-dressers, and clinical clerks should examine each other in any given case as to what they see; to argue out the probabilities of the nature of the case upon the points observed; and having done so proceed to their investigation of the affected part by manipulation or other necessary methods. I would likewise ask the junior teachers of the schools or university to encourage such efforts, for as an old teacher I can speak strongly in favour of them as well as of their efficiency. Indeed, by acting upon this suggestion fresh pleasures will be added to study, for students readily recognise the value of the method of approaching a case in the way I am advocating and find a pleasure in the recognition of the existence of a power of observation which had been dormant and which yields pleasure and profit by its cultivation. As an examiner I can likewise give strong testimony to the importance of this method of testing knowledge, for at the Royal College of Surgeons of England, where I commonly employed it, it was most instructive, and I can recall the interest which my old friend and fellow examiner the late Sir George Humphry took

in the proceeding and how in his enthusiasm he subsequently took it to Cambridge and embodied the value of the method in his well-recognised precept, "Eyes first, hands next, and tongue last." I may add that it was in the differential diagnosis of a scrotal swelling that I first realised the full value of the method I am inculcating, when I, indeed, demonstrated that a student could by the eye alone, by this process of elimination, reach a provisional diagnosis of the case before him, which had only to be confirmed or confuted by manipulative methods, a history of the case, and the exercise of reason.

To dwell upon the value of the sense of touch is surely unnecessary; the *tactus eruditus* of the skilled surgeon is always a wonder to the uninitiated and is only to be acquired by much practice. In learning it I would impress upon the student that it can be educated as quickly by gentle manipulation as by the reverse, and that anything like roughness should always be avoided. To appreciate the significance of feeling the pulse is likewise the product of great practice and much thought. To estimate the presence or absence of tenderness in any part, and particularly in the abdomen, is always difficult, but in all circumstances gentle pressure is more likely to elicit the required information than severe pressure. In my own practice I have found a method of examining a sensitive patient upon this point of such great value as to induce me to describe it to you. I simply place my hand upon the part involved and tell the patient to press upon it with his or her hands until pain is produced; by so doing I can do no harm but learn much, and I am often startled by the greater amount of pressure a patient will by this method endure than I should have ventured to have employed.

With these suggestions to help you in your clinical work I must bring my remarks to a close. I have appreciated very highly the compliment you have paid me by inviting me to give away the prizes upon this the conclusion of the first academic year of the medical school of your new university; I recognise to the full the sound and liberal principles upon which your university has been founded, and congratulate you, your

townsmen, and particularly your Chancellor, upon the energy and triumphant skill with which its establishment has been accomplished. I can now only wish you all God-speed in your work. It was from such feelings, that I have been led to give you the few practical hints which the active work of a fairly long life has enabled me to formulate, to help you in the difficult task of educating your special senses, upon the successful use of which your future success in life must materially depend; they may to some of you seem trivial and unworthy of a great occasion, to others they may appear worthy of a trial, to a few they may seem sound. They form, at any rate, the first attempt to supply a great want and to educate systematically the special senses of medical students by methods which have been proved of value in general clinical work, for they have been tested somewhat extensively both in teaching and examining and are as valuable to examiners and teachers as to students. If I were a Rip van Winkle and could revisit this infant university 100 years hence I should probably find that these suggestions of mine, having done some good, had been incorporated into general teaching methods, and that as natural science had become part of general education the special senses of all students would have been cultivated far more efficiently than they can be said to be at the present time. I should certainly find this University possessing a history as proud as any of its present compeers, and with future prospects bright enough to satisfy the minds of the most hopeful of its present founders. What Birmingham itself would have become by "the application of the highest sciences to its commonest industries and manufactures," I will not venture to predict, for the mind can now hardly realise the possibilities which open out from such a point of view. As to medical science, the applied science of all the arts and sciences for the benefit of man, such would certainly be still in existence, but how can we picture its position? for by preventive medicine, the use of antitoxins, and the influence of friendly bacteria many of the diseases which at the present day are most destructive will probably have been cleared away,

the art of living have become more perfect, and the art of curing have not taken a back place. Life and death will, however, still be present, and men and women with the same natures as now exist, although under altered and possibly improved conditions. New diseases, or old ones so modified as to seem new, may have come into existence as moulded by the altered circumstances of life and encouraged if not brought about by the use of peptones, pharmaceutical fancies, self-drugging, and refinements of daily life. Hope of higher things would not have departed, for Birmingham University, with others like it, would still be in existence and be doing their beneficent work to make life more useful, more profitable, and therefore happier.

I thank you, gentlemen, for your attention and in the words of your Chancellor close these remarks with *Floreat universitas nostra.*

REPORTS OF CASES.

BY W. E. NELSON, HENLEY-IN-ARDEN.

Mrs. B., aged 64.—I was called to see her on April 8th, and found her suffering from diffuse capillary bronchitis, with very weak action of the heart, in fact I thought she would not live many days. However I treated the bronchitis, and gave digitalis and strychnine for the failing heart, and at the end of a week she was improving, though slowly, and at the end of a fortnight she had improved still more; but during the next week, although the condition of the lungs improved, and the heart was doing its work better, she seemed "to hang fire" for no very obvious cause. Also about this time she became drowsy at times, showed "loss of memory" and other nervous symptoms; in fact the woman who was looking after her told me she thought she was "going off her head." I noticed at the same time that her tongue was getting dry, red, and raw, and she complained of great thirst. I now turned my attention to the urine (I regret to say up to this time I had only tested for albumen, leaving the possibility of sugar out of the question). On examining a specimen I found the sp. gr. 1045 and that it was loaded with sugar. Thinking the quantity of sugar altogether out of proportion to the symptoms produced, I began to make enquiries into her mode of life, diet, etc., and found out the following curious facts, viz. : for the last fifty years, in fact as long as she could remember, she had "abused the use of sugar." As a young woman she was continually eating sugar. Her tea was a syrup, and four or five times during the day she would drink a glass of water with three or four spoonfuls of sugar in it, and that during the whole of her present illness she had, without my knowledge, been drinking freely of this beverage (*i.e.*, I had told her she might drink lemon water).

To sum up, in fact. She had for fifty years of her life, on her own confession, almost lived on sugar.

As her symptoms were getting serious, and coma threatening, I at once stopped all sweet drinks, and put her on a diet—though not a strict diabetic diet—but had to give her a certain amount of “sweet stuffs” in the form of “saccharin” to satisfy the craving for “sweets” which was very great.

This treatment acted like a charm, and from that date she commenced a rapid convalescence. I subsequently pointed out to her the risk she was evidently running by taking sugar as she did—sketched out a suitable diet, though not a strict one, and when I last examined her urine some few weeks ago and some four months from first seeing her, the result was:—Sp. grav. 1010; acid; no albumen; *no* sugar.

Harry W., aged 7.—On March 1st I was called to see patient and found him suffering from a fairly typical attack of Diphtheria. Both tonsils and uvula being involved and the soft palate to a slight degree. I felt sure of my diagnosis, but sent a swab (taken before commencing any local treatment) to be examined. I got a negative result by wire, and the next day sent two more, including a piece of membrane and received again—negative results with both. However, I did not change my opinion, and the case was treated from the first as one of diphtheria. 2,000 units of the antitoxin was injected the first day and the usual local treatment was applied, and as the case appeared to go on well the antitoxin was not repeated.

The disease ran a short course, and in about ten days the child was convalescent, and made to all appearances a good recovery. I did not see the child again till a month or five weeks later, when his mother asked me to see him, as he was talking in a curious manner, and also squinted. She had noticed too that he was unsteady on his legs, and “fell about” whilst at play. I at once went to see him, and found he had some paralysis of the palate, with internal strabismus; he was also unsteady on his legs, and there was loss of knee jerks; his right arm also appeared to be weak. I ordered complete rest, and prescribed strychnine and iron. A few days later I saw

him in the afternoon, and did not find any great change. I was, however, called early the next morning about 1-30, and I found him practically dying. They informed me that since I left in the afternoon of the previous day he had grown worse. All food returning by the nose, in fact he was unable to swallow, and could not speak, or rather could not articulate. The most alarming symptom was increasing oedema of the lungs, due apparently to paralysis of the diaphragm. Treatment was of no avail, and the child died a few hours afterwards, the lungs getting completely blocked.

CASE OF CEREBRAL ABSCESS: TREPHINING, RECOVERY.

UNDER THE CARE OF MR. ALBERT LUCAS, F.R.C.S.,
ASSISTANT SURGEON, GENERAL HOSPITAL.

ON Sept. 21st, 1901, I was called to see a patient who had just been admitted under the care of Dr. Saundby. The following history was obtained. The patient was a woman aged 45, who had been married twenty years, and had had nine children, the oldest being nineteen years old, and the youngest six months. She has been deaf, and has had a purulent discharge from both ears following scarlet fever eighteen years ago. Three years ago an operation had been performed on the right ear.

The present illness began about Sept. 14th, a week before admission, with intense headache, referred chiefly to the right side of the head, she complained of nausea but was not sick; several nights before admission she was delirious; the discharge from the ears did not cease.

On admission she was unable to give any history of her condition or to answer questions rationally. When roused she complained of pain in the right side of the head. She had sordes on her lips, the left side of the face was partially paralysed;

there was conjugate deviation of both eyes to the right, the pupils were equal, neither contracted nor dilated and re-acted to light. There was no optic neuritis. The left arm and leg were partially paralysed. There was a purulent discharge from both ears. Pulse 68. Temperature 97° F.

Operation. A hypodermic injection of morphine gr. $\frac{1}{4}$ was given, before she was anæsthetised with chloroform. A large flap was then reflected downwards from above and slightly behind the right ear. The skull was intensely hard and thick. With a good deal of exertion a crown of bone was removed, the centre being about $1\frac{1}{4}$ inches behind and above the middle of the external auditory meatus. A director was then passed between the bone and the dura mater for some distance around the trephine hole, but no pus was found. The dura mater bulged into the wound, and when it was incised the brain protruded through the opening. An endeavour was then made to enlarge the trephine hole with Hoffman's gauge forceps but the skull was too hard for them to be of any use. An exploring needle was thrust into the brain substance in every direction, but no abscess was found; a director was tried and after many punctures an abscess was struck about $1\frac{1}{2}$ inches from the brain surface and apparently in the region of the ascending parietal convolution. The pus was extremely foul smelling, and from one to two drachms in amount. A drainage tube was inserted into the abscess cavity, but owing to the great intracranial tension could only be kept in position by suturing it to the skin. The skin was loosely brought together, and the wound dressed with sterilized gauze and wool. A considerable amount of brain substance came away during the exploration.

The next day (Sept. 22nd) her condition had not appreciably altered, the temperature went up once to 102° F., and the pulse rate varied from 84 to 108. The latter at times became rather feeble. Hypodermic injections of strychnine were given every four hours. Sept. 23rd the wound was dressed and found to be in a very dirty, foul state, and the scalp around very puffy; the stitches were taken out and the tube removed; fomentations

were applied. She complained of intense headache, the paralysis remained unchanged.

Oct. 1st. The wound is still very foul. Temperature normal. Paralysis is gradually disappearing. Knee jerks are excessive, particularly the right. Well marked ankle clonus, also more on the right side. She has incontinence of urine. Oct. 5th very delirious, especially at nights. Several sloughs have come away from the wound which is now much cleaner, and the puffiness of the scalp is going down.

Oct. 20th, going out to day. Is perfectly sensible, and says she feels better than she has done for years. The paralysis has entirely disappeared. Knee jerks are normal, no ankle clonus. Wound almost healed. Except for a slight purulent discharge from the ears and deafness, she appears perfectly well.

Remarks. The diagnosis of cerebral abscess in this case was comparatively easy. The right-sided headache, nausea, and paralysis of the left side, with a slow pulse and a low temperature rendering it fairly certain. The absence of optic neuritis was also of assistance. The pus which was rather deeply seated was very foul, and infected the wound so severely that I expected a septic meningitis and an unfavourable result. Also a fortnight after the operation when everything appeared to be going on well, she became exceedingly noisy and almost maniacal, this apparently without any cause, and clearing up in the same manner. I am much indebted to Mr. Barling for this case, and for allowing it to remain under my charge.

MEDICAL ABSTRACTS.

Le Signe Automatique de la Mort Réelle. Moyen d'éviter l'Inhumation prématurée. Par le Docteur J. V. Laborde.

Paris: Schleicher Frères, Editeurs. 1900. By W. J. McCardie, M.B., B.C.

Under the above title, Dr. Laborde publishes the sequel to his book entitled "Les Tractiones rythmées de la langue, moyen rationnel et le plus puissant de ranimer la fonction respiratoire et la vie," which deals with the treatment of apparent death. The present monograph treats of the reality and certainty of death as determined by a mechanical and automatic process, and of the limits of duration of the vital functions in this condition. It is proposed to give a *résumé* of the successive chapters of this book, as the subject, far from being one of academic interest, is really one of the most vital importance, especially in cases of drowning, apparent death from chloroform, asphyxia neonatorum, and, as the author remarks, as a means of avoiding premature burial.

Chapter 1. Death of the Organism. The Respiratory Reflex, and the Method of Rhythmical Tongue Traction.

Death of the organism presents two successive phases. In the first, though respiration and circulation fail, the vital functions of the tissues and organic elements yet persist in a latent fashion. In the second phase, these vital functions disappear in a definite order of succession and subordination. Although in the first period there are external and apparent signs of death, this apparent death is not actual; it becomes so in the second period just mentioned. The respiratory reflex is one of these latent survivals, constituting as it does the one function absolutely essential to life.

The nerves concerned in the respiratory and lingual reflex are firstly the superior laryngeal, a sensory branch of the vagus, which sends directly terminal filaments to the base of the

tongue. Next comes the glosso-pharyngeal, which, besides its gustatory functions, plays, according to Laborde, a more important part than is generally supposed in the respiratory function. Thirdly, comes the lingual, a sensory nerve. From these connections it results that the tongue can act as an instrument for exciting the sensibility of the nerves in question. Thus, in drawing on the tongue the sensory nerves are stimulated in such a way as to provoke and bring about the respiratory reflex, transmitted through the medullary respiratory centre, and thence to the motor respiratory nerves, especially the phrenic and diaphragmatic nerves. If the superior laryngeal and glosso-pharyngeal nerves be cut, the respiratory and closely associated cardio-vascular functions are no longer possible. Again, if the phrenic or diaphragmatic nerves be cut, the respiratory and cardiac reflexes are alike impossible.

The practical application of these results by the method established and systematised by the author to the treatment of apparent death in its various phases, of which asphyxia is the most frequent in one or another form, constitutes the most effective treatment of that condition.

Technique.—Seize the anterior third of the tongue between the thumb and index finger, preferably covered with a towel, and make strong successive rhythmical tractions upon it followed by relaxation, at the rate of eighteen to twenty times a minute. It is important to feel that one is pulling upon the root of the tongue. When a certain resistance is felt it is evident that respiratory function is being re-established and that life is returning. Usually then one or several swallowing movements are made, soon to be followed by a noisy inspiration, called by the author the "inspiratory hiccup," the first sign of revival. If the jaws are clenched and the teeth closed they must be forcibly opened. If one has to do with a case of drowning it is useful to first introduce the index finger of the other hand to the back of the throat, so as to bring on vomiting if possible, in order to empty the stomach of water or food. In certain conditions a special instrument of prehension is

useful and even necessary. One of these conditions is that of asphyxia neonatorum, which, as is well known, furnishes the largest number of opportunities for the practice of tongue traction. The infant's tongue, from its comparatively small size, is difficult to seize and to hold, and, although it can be well manipulated in most cases, in many the prehensile instrument is needed. Usually, ordinary artery or tongue forceps are used, but with these instruments it is not easy to calculate the degree of pressure required to hold and pull on the tongue, for that of the infant can be easily damaged. This is not unnecessary in view of future suckling, as the tongue plays an essential part in the act. Professor Budin has devised a modification which reduces by means of a fenestrum the surface of pressure. The author has invented a forceps with crossed springs, a cross-bar at the end, and fenestrated blades. The power of the springs is so calculated as only to exercise on the tongue the required amount of pressure. A stronger model is made for the adult. With either of these the pressure is not even painful. The author also suggests that these forceps would be useful in chloroformisation.

Chapters 2 and 3 are devoted to experimental considerations. In the death of the organism sensation is the first to disappear, next motor power, and lastly muscular contractile power. As functional fatigue comes on correspondingly additional stimulus is needed to produce reaction. Cardiac action is closely associated with respiratory function by means of intimate nervous connexion through the medullary nuclei and nerves connected therewith. Hence lingual traction stimulates reflexly the heart as well as respiratory apparatus.

The limit of time within which after objective death resuscitation may be brought about is generally three hours. This limit is longer for motor than for sensory nerves.

Chapter 4. After numerous experiences in different kinds of asphyxia and particularly of asphyxia and apparent death of toxic origin (chloroformisation), by submersion or drowning, the author has been able to record cases of recovery due to lingual

traction of $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, and even three hours after more or less prolonged submersion. He thus has been able to demonstrate the extreme limit, three hours, of vital function in the parts concerned in the revival of respiratory function and life.

It is pointed out in Chapters 5 and 6 that to perform lingual traction by the ordinary means for three hours on a motionless and silent corpse needs courage, patience, and perseverance. So the author has had devised automatic apparatus capable of evenly and rhythmically exercising traction on the tongue. Mouchel invented a clockwork tractor of the necessary power (about 400 grammes), 4-5 centimetres in length, working at the rate of 18-20 times a minute. But this apparatus needed winding up every five or six minutes. With the addition of the tongue forceps already described it was used for the successful resuscitation, after 2-3 hours' work, of dogs apparently dead from extreme chloroformisation. The first signs of revival were a sensible resistance of the tongue to traction and a certain redness of the tongue. Then an apparatus worked by an electric motor was devised by Professor Dussaud and M. Jaubert to obviate the difficulties presented by the clockwork system.

The practical application of lingual traction is indicated in Chapter 7. If the method does not succeed in restoring life after three hours' application apparent death has become real death, so that the negative result obtained becomes a sure sign of actual death. To make assurance doubly sure rhythmical traction may be carried on as long as six hours.

The terrible fear among the living of premature burial after apparent death may thus be met, and in a few hours. The author then considers some of the other signs of death. The temperature of the body when it reaches the minimum (25° to 28° C.) incompatible with life furnishes a thermometric sign of actual death. The author claims to have been the first to systematise the use of this means, which is within the reach of all.

In the year 1859 he found that a polished steel needle inserted into the muscles of an apparently dead person became

covered in twenty minutes or so with rust, but when placed in the muscles of a corpse was unaffected. The absence of this phenomenon of oxydation is a constant sign of death.

Dr. Icard is quoted as asserting that the true sign of death is prolonged arrest of the circulation, and not stoppage of the heart's action, so it was proposed, as absorption is concurrent with circulation, to inject coloured fluids and fluorescine in particular into the subcutaneous tissues or veins. The liquids would be easy to detect in the skin, eye, blood or urine. But the author objects that this method is not sure and does not carry with it the possible means of restoring life to the apparently dead, which is a great point in his method.

Another means proposed to avoid premature burial is that of Count Karnice Kanicki, a Russian. When the corpse is placed in the coffin, a ball is placed on the chest wall and connected with a small bell and other signal. Any movement of the chest wall would set the apparatus in action. This method also lacks the essential feature of tongue traction in that it does not aim at restoring life.

In the state of apparent death or latent vitality there is a condition of extreme asphyxia. The arterial blood becomes black and holds much CO_2 , which almost completely takes the place of oxygen. Only slight, almost imperceptible, traces of oxygen remain. Tremulous myocardiac movements appreciable by the eye persist, and under favourable conditions may be recognised by radiosopic examination. The auricles continue to contract in however weakly a fashion, and when they cease to do so, death is absolute. The very feeblest of oscillations may be perceived in the blood columns of the great vessels near the heart.

The author advocates the general application of automatic tongue traction carried out in properly equipped and staffed mortuaries in all cases of apparent death. Thus, death may in a few hours be shown to be real or not so.

[It is curious that the author has not advised the combination of artificial respiration, itself a mechanical and reflex heart stimulant, with tongue traction. W. J. M.]

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

Session 1901-1902.

The First Ordinary Meeting of the Session was held in the Birmingham Medical Institute, on Thursday, October 10, 1901, the president, Dr. E. MALINS, and later Mr. M. A. MESSITER, being in the Chair.

Fifty-seven members were present.

Confirmation of Minutes.—The Minutes of the previous Ordinary Meeting, and of the Special Meeting, held March 28, 1901, were read, confirmed and signed.

Election of Members.—The following Members of the Association were elected Members of the Branch, viz. :—

C. Bracey Dale, L.R.C.P., M.R.C.S., nominated by Dr. Saundby;
D. R. Rowlands, M.D., F.R.C.S., nominated by Mr. Morrison;
H. B. Wilson, L.R.C.P., M.R.C.S., nominated by Dr. Stacey Wilson.

Communication from Shropshire and Mid-Wales Branch.—An official letter containing the following resolution, passed at a meeting held in Shrewsbury on May 28th last, was read, viz. :
“That this meeting of the Shropshire and Mid-Wales Branch having discussed the whole question of club practice within its area, desires to place on record its conviction that the present system of contract practice is inadequate, and considers that no medical man residing in the Branch area ought to accept less than 5/- per annum per adult member.”

Exhibition of Patients and Specimens.

Cæsarean Section.—Dr. Purslow showed a woman on whom he had successfully performed this operation. The living child was also shown.

Double Nephro-lithotomy.—Mr. Haslam showed a man, aged 37, from whose right kidney he had removed a stone weighing 489 grains and from the left one weighing 1,289 grains. Symptoms had been present for seventeen years. A sinus remained over the left kidney through which a small quantity of urine escaped. The incision over the right kidney had healed completely.

Actinomyces.—Mr. Haslam showed a girl, aged 20, who had been the subject of actinomyces of the face and lower jaw. The condition at first resembled chronic periostitis. The treatment adopted was incision, scraping, and packing with iodoform gauze, while large doses of iodide of potassium were given internally. Improvement was slow, but finally she was completely cured. Her occupation was to examine newly made brakes of bicycles, and no contact with straw could be made out.

Bilateral Ovarian Cysts.—Mr. Morrison show the specimens he had successfully removed in a case of double ovarian cystoma. The patient was a widow, aged 63, who had noticed progressive abdominal distension for two years, during which period she had failed in strength and became emaciated. The girth at level of umbilicus was 44 inches; the lines drawn from umbilicus to right iliac spine, left iliac spine, and symphysis pubis, respectively measured $11\frac{1}{2}$ inches, $10\frac{1}{2}$ inches, and $10\frac{1}{2}$ inches.

A large multilocular cyst, whose wall firmly adherent to a wide area of parietal peritoneum, having been removed from the right ovary, the region of the left ovary was examined and found to present a thick pedicle which led up to a cyst containing about three pints of fluid, situated in front of the left kidney and quite concealed by the intestines. The left cyst was free from adhesions and was easily removed. The great omentum was carefully adjusted so as to protect the bowels from contact with the raw surface of the abdominal wall. Recovery was uninterrupted and complete. Mr. Morrison drew attention to the importance of examining both ovaries in every case of operation for ovarian cystoma.

Concretion from Appendix.—Mr. Morrison showed a concretion removed from a girl, aged 16, suffering from an abscess due to appendicitis. The wall of the abscess was bounded by omentum, bowel, and perforated appendix, and contained the concretion free in its cavity. The abscess was drained and complete recovery ensued. Projecting from one end of the concretion was a bristle (probably from a tooth-brush), which appeared to be the nucleus of the mass.

Papers.—Mr. Jordan Lloyd read a paper on "appendicitis." In the subsequent observation remarks were made by Mr. Messiter, Mr. Deansley, Mr. Morrison, and Mr. Leedham-Green; and Mr. Jordan Lloyd replied.

Dr. Purslow read "Notes of a case of Cæsarean Section," under the following headings:—"Performed per Rachitic Pelvis; two previous pregnancies terminated by craniotomy; after extraction of child, uterus removed by retroperitoneal Hysterectomy; relative advantages of this proceeding compared with those of the conservative (Sanger) Cæsarean Section." The paper was discussed by Mr. J. Furneaux Jordan.

Mr. Christopher Martin read a paper on "The prevention and treatment of Shock in Abdominal Operations," dealing with the following points:—"Causes of shock; prevention; warmth; complete anæsthesia; Trendelenbey's position; rapidity of operation; arrest of hæmorrhage; avoidance of lesions of vital organs. After treatment: warmth; posture; stimulants; strychnine; saline injections; morphia." The paper was discussed by Mr. Victor Milward, Mr. Jordan, and Mr. Morrison; and Mr. Martin replied.

MIDLAND MEDICAL SOCIETY.

The Annual Meeting was held at the Medical Institute, on Wednesday, October 16th, 1901, the President, Mr. JORDAN LLOYD, being in the chair.

Mr. A. Elmslie Crabbe was elected a member of the Society.

The following Officers were elected for the ensuing session:—
President, Mr. Arthur Oakes; Treasurer, Mr. John Garnett;
Secretaries, Mr. Christopher Martin and Dr. Jas. W. Russell;
Members of Council, Messrs. Haslam, Newton, E. P. Whitcombe
and Wood White.

The First Ordinary Meeting was held on Wednesday evening,
October 30th, 1901, at the Medical Institute, the President,
Mr. OAKES, being in the chair.

Drs. M. S. Maclean, I. L. McNeill, J. T. Hewetson, J. R.
Charles and James E. H. Sawyer were elected members of the
Society.

Gastrostomy.—Mr. Barling showed a male patient, aged 48,
upon whom he had performed Albert's Gastrostomy five-and-a-
half years previously, for what was then believed to be malignant
disease of the oesophagus. The obstruction was situated
fourteen-and-a-half inches from the teeth and in the absence of
any history of injury, tubercle, or specific mischief, was regarded
as malignant. At the time of the operation the patient had lost
thirty-two lbs. in weight, only fluids and occasionally a little
bread could be swallowed and nothing could be passed through
the stricture. Since the operation, and at the present time, the
man had been able to follow his occupation as an edge tool
maker. He looks fairly well and vigorous though he is not so
stout as he was before the difficulty in swallowing arose. He
wears in the gastrostomy opening a tube of five-eighths of an
inch diameter through which he is able to introduce foods of all
kinds if finely divided, and there is practically no leaking at all.
There is a hernia through the weakened abdominal wall where
the stomach was brought through the left rectus, but this causes
no inconvenience. The lapse of time having shown that the
stricture is not malignant it is proposed to make an attempt to
dilate the stricture from below, and if this succeeds, to close the
gastric opening.

Oöphorectomy for inoperable recurrent cancer of the breast.—
Dr. Edge showed a patient upon whom he had performed

oöphorectomy for recurrent inoperable cancer of the breast. The left breast was amputated on April 10, 1900. The axilla was not dissected out as the glands were not enlarged and the cancer was small, quite free and in the periphery of the breast. The nature of the growth was not quite certain until determined by microscopic examination.

On October 17, 1900, the pectoral muscles were divided and glands found to be shotty above the clavicle and on the vessels at the root of the neck. In February, 1901, the right breast and right axillary glands became involved. On March 10, 1901, oöphorectomy was performed per vaginam. On October 30, 1901, the glands and breast lumps were quite soft and had practically cleared up. The weight increased two stones and the general well being was much improved. Thyroid extract had not hitherto been given, but Dr. Edge now intended to make use of it.

Thoracic Aneurysm. Dr. Emanuel showed a case of saccular aneurysm arising from the transverse part of the arch of the aorta. The specimen was from a soldier who had contracted syphilis in India three years before the symptoms of aneurysm developed. He died fifteen months after his first symptom from pressure on the trachea, and the *post-mortem* examination revealed advanced lardaceous disease of kidney, spleen and liver, with numerous small gummata in the liver and one gumma in the spleen. There was no sign of tuberculosis or of suppuration. The heart was of normal size.

REVIEWS.

A MANUAL OF SURGICAL TREATMENT.*

IN this volume of Messrs. Cheyne and Burghard's book, the Surgical Affections of the Head, Face, Jaws, Larynx, and Trachea are dealt with, while there is a special section on the Intrinsic Diseases of the Nose, Ear and Larynx written by Mr. Lambert Lack.

The surgical affections of the scalp are first described and in this description there are one or two points open to criticism. For instance, no mention is made of the necessity of always probing a scalp wound. True, it may be said that this is a point in minor surgery, that everyone is aware of. That is quite correct; but the importance of always probing a scalp wound is so great that it cannot be too often insisted upon and, moreover, in other parts of the book the author's have not neglected what is often mis-called minor surgery. One piece of advice given is that, when the external table of the skull is bruised and soiled without being fractured, it is well to chip away the obviously soiled surface with a chisel. We confess that it is not our custom to do this, that we do not see the necessity for doing it, and that there seems decided objection to the practice. Again, the suturing of scalp wounds as a routine custom is advised. This is good advice as far as a wound of the scalp made in the operating theatre is concerned; but we do not deem it good advice in the case of a drunken man, who has fallen down in the street and has knocked his head against a dirty pavement. Clear directions are given as regards the treatment of tumours of the scalp; but we do not see any mention of the fact that a dermoid of the scalp may have a pedicle passing through the bone.

There is no more important part of Head Surgery than that

* A Manual of Surgical Treatment. By W. Watson Cheyne and F. F. Burghard. Part V. London: Longmans, Green and Co. 1901.

relating to intracranial suppuration resulting from disease and we can only say that the section dealing with this is in every way most admirable. A good *résumé* of symptoms is given, and then the treatment of cerebral abscess, sinus thrombosis, etc., is fully discussed; such ample details being given that the description will be a good guide even to the operator, who but rarely is called upon to treat such conditions.

The authors describe an ingenious operation for the treatment of hydrocephalus, by making an artificial drainage channel from the lateral ventricle into the sub-dural space. This is founded on a true appreciation of the pathology of the condition and deserves a good trial. Many pages are rightly devoted to an excellent description of the plastic surgery of the face and the illustrations in this section may be especially commended. The operation of tracheotomy is dealt with in a very practical way, but we can find no reference to the many causes of difficulty in leaving out the tracheotomy tube. Such difficulties do not seldom occur and reference to them should certainly be made in a book of this kind.

We now come to the chapters on the Intrinsic Diseases of the Nose, Ear and Larynx. Here Mr. Lack rather departs from the plan of the rest of the book by including a description of the anatomy of the nose; but we think he is right in doing so, for the anatomy of the nose and its accessory sinuses is intricate and, as a rule, not too well understood. Praise is due to the author for the careful way in which he has compiled this part of the book and also for the moderation and soundness of his advice. In writing of tumours of the nose, Mr. Lack would have done well to mention the occasional occurrence of a meningocele hanging down into the nose through the cribriform plate of the ethmoid. Such tumours occur and are liable to be mistaken for polypi, usually with a fatal result. We can say of the part of this volume written by Mr. Lack, and of the volume as a whole, that it takes as high a rank as do the preceding four volumes.

LARYNGEAL PHTHISIS.*

IN this little book Mr. Lake gives a short outline of the whole subject of Laryngeal Phthisis, and embodies the results of his experience of 329 cases treated at the North West London Hospital for Consumption. The author's observations on ætiology and symptoms agree with those of previous observers. He emphasises two practical points, (1) Temporary aphonia is by no means rare in the early stages of throat consumption and is very liable to be mistaken for ordinary functional aphonia; (2) Anæmia of the larynx only occurs in about one quarter of the cases of laryngeal phthisis, and the chief value of such anæmia as a sign is in facilitating the early diagnosis of pulmonary disease.

Dysphagia for solids according to the author points to disease of the epiglottis, while dysphagia for fluids is more marked when the arytenoids are affected. As a rule we think this is true, but the information afforded by the mirror is so exact and so easily obtained that no one who can use it, even moderately well, need depend upon symptoms for a diagnosis.

The chief interest in the book centres in the section on treatment. Mr. Lake is nothing, if not surgical, and physicians will scan this part of his work with interest in order to see what an up-to-date laryngeal surgeon has to say. The result of such a scrutiny is, we are bound to confess, not so encouraging as the sanguine anticipations of ten years ago would have led us to expect, but yet no one who remembers the treatment of laryngeal phthisis twenty years ago can doubt that very substantial progress has been made and that much may be accomplished in suitable cases.

Superficial lesions, such as occur on the cords, Mr. Lake treats with antiseptic paints, e.g., Formalin (5 per cent.) or freshly prepared Protargal (3-10 per cent.). The paint must be rubbed in vigorously under cocain and a soothing insufflation may be

* Laryngeal Phthisis. By Richard Lake, F.R.C.S., with 36 Illustrations, 21 coloured. Pp. 90. London: Rehn Limited. 1901.

administered to prevent irritation. Intra-tracheal injections are also useful.

Deep ulcerations, such as frequently occur on the posterior wall require the curette followed by the application of lactic acid or formalin. Strictly limited lesions, whether occurring on the posterior wall, the false cord, the epiglottis, or elsewhere, Mr. Lake cuts out with his powerful punch forceps, in cases in which the patient's general condition is fair. He has had no trouble with hæmorrhage and his patients have not complained of much pain. In two cases he removed a badly ulcerated epiglottis with the galvano caustic loop with the greatest possible relief to distressing dysphagia.

Most laryngologists have, we believe, limited their treatment of laryngeal phthisis to palliative injections and the use of the curette followed by the application of strong lactic acid at intervals of ten days or a fortnight. In a considerable number of cases this treatment gives very satisfactory results, and in some the larynx is permanently cured. We do not doubt that in a few very carefully selected cases the more extensive surgical procedures recommended by Mr. Lake may be successfully practised, and we congratulate him upon the courage and success with which he has treated an unpromising subject.

Mr. Lake's literary style is by no means on a par with his professional attainments, and the book shows many blemishes from this point of view, but it is a piece of good honest work and well worthy of the attention of practitioners who have to treat cases of throat consumption.

The coloured plates are well executed, but not up to the Munich standard.

APPENDICITIS: ITS PATHOLOGY AND SURGERY.*

MR. LOCKWOOD is exceedingly well known to surgeons for the very excellent work he has done in aseptic surgery and particularly in that concerning the surgery of the peritoneum.

The book largely consists of a description of diseased appendices which he has excised. The clinical history, morbid anatomy, and morbid histology of each case is given and commented upon. There can be no doubt that a work of this kind from so careful an observer as Mr. Lockwood will be found a most valuable contribution to the literature of this so common affection. The book commences with a good and correct description of the Anatomy and Histology of the Appendix and of the cæcal region. Cases of appendicitis are divided by the author into eight groups:—

1. Appendicitis with ulceration of the mucosa.
2. Appendicitis with ulceration of the mucosa and bacterial invasion.
3. Appendicitis with ulceration of the mucosa and with faecal concretions, foreign bodies, and their complications.
4. Appendicitis with stenosis and its complications, cysts, mucocele, empyema, ulceration, and bacterial invasion.
5. Appendicitis with sclerosis and obliteration of the lumen.
6. Appendicitis with lymphangitis and lymphadinitis.
7. Tuberculous appendicitis. astinomysotic appendicitis.
8. Appendicitis complicating malignant and other diseases.

The terms "recurrent," "relapsing" "suppurative" appendicitis are discarded. The above eight varieties are no doubt more correct pathologically, but to our mind do not convey anything clinically definite and we must confess to have a liking for the old terms.

* Appendicitis: its Pathology and Surgery. By Chas. Barrett Lockwood, F.R.C.S., Assistant Surgeon and Lecturer on Anatomy in St. Bartholomew's Hospital, etc. London: Macmillan and Co.

Cases of all varieties are given, and many most excellent microphotographs add considerably to the value of the book. The latter part of the book dealing more particularly with difficulties in diagnosis, treatment, and after treatment will be found of most aid to practitioners. As a purge, calomel grs. iij to v is recommended before sulphate of magnesia and hot fomentations to the abdominal wall give more relief than cold. In chronic conditions, he states that he has seen good results follow the administration of small doses of salol in powder or β -naphthol. We thoroughly agree with the author's recommendations as to after treatment, but we cannot agree with him that in every case it is wise to make a prolonged search for the diseased appendix where there is a localised abscess. If the appendix can be easily found it is much better to remove it, but to make a long search must add greatly to the risk run. It is stated that if the appendix is not removed when an abscess is opened as many as 15 per cent. relapse, this does not bear out our experience as we have found that not 10 per cent. of our cases relapse in which the appendix has not been removed. Stress is rightly laid on the importance in all cases of a rectal examination both for purposes of diagnosis and treatment. To those who are interested in the study of this subject we can confidently recommend this book as being thoroughly sound and instructive.

GUY'S HOSPITAL REPORTS.*

SINCE the appearance of the last volume of the Guy's Hospital Reports, the editorship has passed into the hands of Dr. J. H. Bryant and Mr. F. J. Steward, who are to be congratulated on the preparation of an excellent volume, though it is one the

* Guy's Hospital Reports. Edited by J. H. Bryant, M.D., and F. J. Steward, M.S. Vol. LV., being Vol. XL. of the Third Series. London: J. and A. Churchill, 1901.

interest of which is almost entirely medical. Only one surgical paper is included, and that is not written by a member of the staff of the hospital. With the exception of two gynaecological papers, all the rest of the articles deal with medical subjects.

Dr. Bryant has himself contributed three papers. The first, written in conjunction with Dr. Hale White, describes a very remarkable case of calcification of the arteries and obliterative endocarditis, associated with hydronephrosis, in a child aged six months. The second and most important deals with the subject of functional pulmonary incompetence and dilatation and atheroma of the pulmonary arteries as complications of mitral stenosis. Dr. Bryant has collected sixteen examples of these conditions, this being, as he says, the largest collection hitherto published. He describes the physical signs on which the diagnosis can be made, and contrasts them with those of aortic regurgitation, with which the condition is of course most likely to be confused. We note that in the writer's opinion the murmur of aortic regurgitation is in 90 per cent. of the cases best heard in the third *left* space close to the edge of the sternum, and that it is in this situation that it is usually first to be detected. Dr. Bryant's third paper records an interesting case of acute intestinal obstruction due to adhesion of the ileum to a lithopedion.

In addition to his share of the paper above mentioned, Dr. Hale White contributes notes of a case of cerebral tumour, in which the skull was trephined no less than four times for the relief of headache and blindness. He alludes to other cases in which the same procedure has been successfully carried out as a palliative measure, and remarks that the only drawback to the operation is to be found in the hernia cerebri which occasionally results. Dr. C. J. Harnett classifies and discusses the treatment of tubercular disease of the lymphatic glands in the neck, this being the only paper which deals with a subject of purely surgical interest.

Other papers of value are those by Dr. C. C. Pakes on the

results of the Widal test in 326 cases, which goes to support the reliability of the reaction from the point of view of diagnosis; by Dr. J. G. Taylor on chronic mercurial poisoning, with special reference to the danger in hatters' furriers' manufactories; and by Dr. A. J. Cleveland on the symptoms immediately preceding death from exophthalmic goitre. The two gynaecological papers are contributed by Mr. Targett, who describes two Nægele pelves, and by Dr. Thos. G. Stevens, who analyses the radical operations for uterine cancer performed in the hospital from 1886 to 1899.

Special attention is due to Dr. Beddard's paper on transfusion and venesection. In this article Dr. Beddard endeavours to reduce the indications for these procedures to some systematic standard, and his remarks are worthy of very careful study. The results at which he arrives are too numerous to be quoted here, but his paper is of great therapeutic value, and should go far to obviate the present haphazard use of these two operations.

ANÆSTHETICS AND THEIR ADMINISTRATION.*

THIS, the second edition of Dr. Hewitt's well known work on Anæsthetics, is practically a new volume. It includes, as did not the former edition, a chapter on the history, pharmacology and experimental physiology of general surgical anæsthesia, thus making the book complete from every point of view. The physiological part has passed through the hands of Dr. Leonard Hill, F.R.S., thereby gaining in authority. The author has also incorporated in his book much of his recent work on the practical side of anæsthetics notably on the administration at

* Anæsthetics and their Administration. A Text-Book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.A., M.D. Cantab., Anæsthetist to His Majesty the King, Anæsthetist and Instructor in Anæsthetics at the London Hospital, etc. London: Macmillan and Co. 1901. Pp. 552, with illustrations. Price, 15s. net.

ordinary atmosphere pressure, of different mixtures of nitrous oxide and oxygen, and describes new apparatus he has devised. The most important among the latter is his modified form of Clover's inhaler, in which the air way is much enlarged.

In the treatment of heart failure, Dr. Hewitt insists that the anæsthetist's undivided attention must be devoted to securing and maintaining *efficient* artificial respiration and a proper posture. He does not seem to think much of the value of drugs. We should like to have had his experience or opinion of the value of such means of resuscitation as 'Labordes' method of tongue traction and Maas' rapid percussion of the heart. With regard to the much vexed question, How does chloroform kill? the author remarks that "many, perhaps most of the chloroform accidents of practice, take place, not from an overdose of the drug, but from some intercurrent and unrecognised asphyxial state, which in conjunction with the presence of chloroform within the circulation quickly leads to fatal *cardiac paralysis*. Chloroform primarily and markedly depresses the heart and it is this cardiac depression which renders it difficult to resuscitate patients; for were it merely a respiratory depressant artificial respiration would invariably be successful. Fatal phenomena then are essentially circulatory, and failure to resuscitate the patient is due to the impossibility of restoring cardiac action." If this fact were more universally recognised there would be fewer deaths under chloroform.

Dr. Hewitt's book is thoroughly up-to-date. It contains a wealth of information, and remains as before the best book on the subject in the English language. The practitioner or student of anæsthetics will do well to not merely read but study the work of such a master of his art as is the author.

A MANUAL OF SYPHILIS AND THE VENEREAL DISEASES.*

THIS work deals with the important subject of Venereal Disease in its various forms. The aim of the work is to furnish a reliable and full account of the subject which may be of use to the student and practitioner. There are so many controversial points in the natural history of syphilis, that the ordinary medical reader is often somewhat confused as to the bearing of facts and theory. The work which Drs. Hyde and Montgomery have produced, is as far as possible free from debate.

The writers at the same time hold views and make statements which would hardly be received in this country without demur. Thus it is stated that "no man should marry, whatever time may have elapsed after infection, who has not had a long interval—at the very least six months—of absolute freedom from symptoms." We think the opinion more usually held in this country that two years should elapse is one that is much safer.

The writers have no sympathy with State Regulations as a preventive of venereal disorders. We rather think they are somewhat inconsistent in their remarks on this subject when they are compared with those they make on other infectious disorders. The scheme of sanctioning prostitution in any way has always been repugnant to the Commonwealths inheriting the traditions of the Anglo Saxon race. Do we sanction scarlet fever because we confine patients suffering from this disease in a special hospital? The work is, taken as a whole, one of great value, the illustrations are particularly good, being for the most part taken from the well-known and valuable Atlas by Mzacek which we reviewed at the time in the *Birmingham Medical Review*.

We can safely say that the treatise by Drs. Hyde and Montgomery is a work which will always rank as authoritative.

* A Manual of Syphilis and the Venereal Diseases. By James Nevius Hyde, M.D., and Frank H. Montgomery, M.D. Second Edition. London: W. B. Saunders & Co.

TEXT-BOOK OF PHARMACOLOGY AND
THERAPEUTICS.*

It is barely two years since Professor Cushney's Text-Book of Pharmacology and Therapeutics first appeared, and now we have a second edition. We may briefly refer to some of the salient features of the work in its former edition. It was the outcome of a considerable experience in teaching the subjects of pharmacology and therapeutics. The writer early recognised that experimental pharmacology and rational therapeutics are often widely separated, and his object was to bring these into line. No doubt the task was one of considerable magnitude, as the whole subject of drugs, and their practical application, is one of the widest possible limit. There is not the least doubt that the author has eminently succeeded in producing a work wherein the physician will find ranged for him the many data derived from experiment and experience on which he must rely for the treatment of diseased conditions. The second edition, which we more particularly notice, contains several additions and alterations, which are, however, of a minor character, thus bearing testimony to the completeness and erudition of the work as it first appeared. Some new preparations are also noticed in the later edition, chiefly bodies of complex character, such as gland extracts, which are still sub judice. As regards the articles themselves, they are at once full, clear, and written with judgment and due appreciation of facts. Its author shows a breadth of view in dealing with certain questions, as for instance digitalis, which proves that his work is his own, and that he has not retained opinions which are too often handed on by one writer to another. In conclusion we can conscientiously say Professor Cushney's book may be regarded as one of the highest value to the practical therapist.

* Text-Book of Pharmacology and Therapeutics. By Arthur R. Cushney, M.A., M.D. Second Edition. London Rebman, Limited.

THE EXTRA PHARMACOPŒIA.*

THERE is probably no book more commonly seen on the consulting room table, public and private, than Martindale and Westcote's. It has been indispensable. The tenth edition therefore calls for no apology. Its publication has of course been rendered necessary by certain changes in the British Pharmacopœia; the opportunity has, however, been seized to add recent therapeutic advances and discoveries. There is hardly any branch of medicine and surgery that does not show some new method of treatment. The new field of synthetic compounds requires analysis and tabulation for convenience of reference. There has appeared lately the question of serum therapeutics and such questions are carefully dealt with.

We need only say, therefore, that the new Martindale and Westcote more than maintains its position as an absolute necessary for the consulting room table.

**BACTERIOLOGY AND SURGICAL TECHNIQUE
FOR NURSES.†**

THIS book is a revised form of Miss Stoney's lectures to nurses, and as her name has been long associated with the training and teaching of nurses we are right in assuming that her book will contain much valuable information from the point of view of the nurse. At first sight the table of contents strikes one as being over the heads of the ordinary nurses, for there are chapters on subjects such as "Bacteria as a Cause of Disease," "Autopsies," etc., but a closer examination of the work at once shows that there is in reality nothing which a well-educated nurse might not be expected to know. The subjects are simply and clearly given, and we can confidently recommend the work to nurses and those especially who have to teach them.

* The Extra Pharmacopœia. By Martindale and Westcote. Tenth Edition. London: W. K. Lewis.

† Bacteriology and Surgical Technique for Nurses, by Emily M. A. Stoney. London: J. B. Saunders & Co.

THE EDINBURGH MEDICAL JOURNAL.*

WE have to acknowledge the receipt of the ninth volume of the Edinburgh Medical Journal (new series). It contains, as usual, a number of admirable papers, and maintains the high standard which we are accustomed to expect from this journal. Apart from the original articles, the abstracts of current medical literature are always a special feature of this publication, and in the present volume they contain a large mass of valuable information in a comparatively small space. The transactions of the chief Scottish Medical Societies are also shortly reported.

New Books, etc., Received.

From Grant Richards, London—

The Mental Functions of the Brain. By BERNARD HOLLANDER, M.D.

From J. and A. Churchill, London—

Fagge's Text-Book of Medicine. Edited by P. H. PYE SMITH. Fourth edition. Vol. I.

From Rebman and Co., London—

System of Physiologic Therapeutics. Vol. III, Climatology. By D. PARKES WEBER, M.A., M.D.

Diseases of the Intestines. By JOHN C. HEMMATER, M.D. Vol. I.

Diseases of the Digestive Organs in Infancy. By LOUIS STARR, M.D.

The Pocket Formulary for the Treatment of Disease in Children. By LUDWIG FREYBERGER, M.D. Third edition.

Water Supplies. By JOHN C. THRISH, D.Sc. Third edition.

The Therapeutics of the Röntgen Rays. By E. SCHIFF, M.D.

The Surgical Anatomy and Operative Surgery of the Middle Ear. By A. BROCA. Translated by MACLEOD YEARSLEY, M.D.

A Manual of Bacteriology. By HERBERT WILLIAMS, M.D. Second edition.

* The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series. Vol. IX. Edinburgh and London: Young J. Pentland. 1901.

- From H. K. Lewis, London—
 Elements of Practical Medicine. By ALFRED H. CARTER, M.D.
 Eighth edition.
- Gonorrhœal Arthritis. By L. VERNON JONES, M.D.
- Transactions of the Dermatological Society of Great Britain and Ireland:
 Vol. VII.
- From P. S. King and Son, London—
 Public Health and Housing. By JOHN F. J. SYKES, M.D.
- From W. B. Saunders and Co., London and Philadelphia—
 Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D. and
 FREDERICK PETERSEN, M.D. Third edition.
- Principles of Hygiene. By D. H. BERGER, M.D.
- A Laboratory Course in Bacteriology. By FRED. P. GORHAM, A.M.
- Atlas and Epitome of Special Pathologic Histology (continued). By
 LUDWIG HEKTOEN, M.D.
- Dose-Book and Manner of Prescription Writing. By E. Q. THORNTON,
 M.D. Second edition.
- From Macmillan and Co., London—
 Practical Histology. By J. N. LANGLEY, M.D., F.R.S.
- From Baillière, Tindall and Cox—
 The Pocket Gray. Fifth edition.

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THE
BIRMINGHAM MEDICAL REVIEW.

DECEMBER, 1901.

ORIGINAL COMMUNICATIONS.

PRACTICAL OBSERVATIONS ON "APPENDICITIS."

BY PROFESSOR JORDAN LLOYD, M.S., F.R.C.S.,
SURGEON TO THE QUEEN'S HOSPITAL.

I AM aware that many members of our profession consider the subject of Appendicitis was worn threadbare long ago, and that the time of medical societies is now wasted by further discussion upon it. I do not accept these finalist* opinions; indeed my own views are rather in the opposite direction, for I still think we have something to learn, and what to me is even more important, something to unlearn about this now-a-days much talked of and common disease. I dare not hope to contribute much that is new to our present knowledge of the subject, such indeed is not the *raison d'être* of this paper; I merely wish to put before you some of the facts of the malady as they have presented themselves to me during the many years I have been practically acquainted both with the pathological and clinical aspects of this affection.

The word "appendicitis" is now a familiar one with the public, and conveys to it one idea only—that of a dangerous disorder treated either by medicine or operation according to the caprice of the practitioner in attendance. The public knows that some cases die whilst others recover under both methods of treatment, and attributes recovery on the one hand or death

on the other to the skill or the ignorance respectively of the medical man in charge of any particular case. Praise or blame is given to our efforts indiscriminately, regardless entirely of the merit or the blame which we may justly deserve, and this attitude of the public is not to be wondered at when we bear in mind the practice which prevails amongst ourselves in the general use of the term "appendicitis."

"Appendicitis," I take it, means simply inflammation of the appendix, usually of its internal lining, and as such is a malady not dangerous to life; but that it is potent for evil is a too familiar truth; and when evil comes still to apply to the condition the same term, especially when we know that it does not fully express the facts, as when evil has not arisen, is in my opinion not in the best interests of the public or of our profession. I should like to see a closer and more constant association of the words "peritonitis" and "cellulitis" with that of "appendicitis" so that the public might in time learn that it is the peritonitis or the cellulitis which constitutes the serious elements in this disease and not appendicitis itself, and that the one is likely to follow on the other at any time and with every degree of severity; I think they would then better interpret our own attitude towards the disorder, certainly as regards the employment of medicines on the one hand, and of operations on the other.

To understand the pathological and clinical features of appendicitis, it is necessary to keep in mind a few facts relating to the anatomy and the physiology of the organ, the more important of which may here be briefly referred to. The walls of the appendix are identical in structure and continuous with those of the large intestine; presumably therefore their functions are alike. They are certainly liable to the same pathological disturbances, the consequences of which, however, differ materially in the two situations for simple mechanical reasons to which I shall later refer.

The position of the base, or attached end of the appendix, is constant, that is to say, it is always at that part of the cæcum where the three longitudinal bands coalesce; topographically

situated in the right iliac fossa; the well known McBurney's point approximately corresponding to the position of this attached extremity. The tip or free end, on the other hand, may be anywhere in the right side of the abdomen or pelvis, its position depending on the length of the organ—which varies between $\frac{1}{2}$ and 8 or 9 inches—usually from 2 to 4. The tip being free to wander where it chooses, may rest in the left iliac fossa, on the brim or in the cavity of the pelvis, in the lumbar region, behind the cæcum and ileum, and in the umbilical region, either below, above, or at the sides of that landmark. Sometimes the appendix is, in whole or in part, extra-peritoneal, and lies then in the lumbar or iliac regions. It is because of these variations in its length or in its position that the localised inflammatory swellings of appendicitis are met with in such varying situations.

So much for its anatomy; and with reference to its physiology I would merely say that its mucous lining secretes just as does the large intestine, and that liquid fæces pass into and out of the normal organ as a regular thing; and where secretion from the mucous membrane of the large intestine is increased, as in summer diarrhoea for example, so also is that from the appendix, its secretion passing easily enough through the outlet at its attached end into the cavity of the cæcum; and when the secretion of the large intestine is deficient, so also is that of the appendix, and constipation follows in the one as in the other. Inflammation within the appendix is not necessarily attended by symptoms of any kind, so long as the products of the inflammatory process are able to get out of it, pain being induced only where more or less obstruction exists to the easy escape of these products into the lumen of the bowel, and in this factor of obstruction chiefly lies—in my opinion—the key to the whole subject of appendicitis, as we know it in practice and its immediate consequences. Most of the facts of appendicitis are like those of cystitis from stricture of the urethra, or cholecystitis from impaction of gall stones in the cystic duct. What the “appendical” obstructions are, how they originate, and how they

give rise to trouble, I shall now proceed to discuss under the heads of strictures, kinks, occlusions and foreign bodies—under which latter term I include fæcal concretions.

Strictures of the appendix occur in any part of its length, and of every degree of tightness, and may be either congenital or acquired. The congenital explain themselves, and are by far the more common. Amused as we were a few years ago, when we first heard the story of the American lady who told her English doctor that "appendicitis ran in her family," we have since learned that there was solid reason for her statement, and that heredity is an undoubted factor in the etiology of this affection. I have seen appendicitis in several members of a family on several occasions. Acquired strictures may be either simple or specific—the former, the result of chronic inflammation, and the latter of ulceration of the mucous lining, and subsequent cicatrization. The etiology of the simple form of acquired stricture here is precisely that of the better known but less common stricture of the urethra, except that it is not due to gonorrhœal inflammation. It results from a chronic inflammatory process affecting the mucous membrane, extending gradually into the sub-mucosa, and generating there a fibrosis of the connective tissues: it is contractile and constant. This form of inflammation within the appendix occurs usually by extension from the lining of the great intestine. The strictures due to specific causes follow as I have said on ulceration, and the types of ulcer met with in the appendix are similar to those which affect the intestine in its neighbourhood, viz.—typhoid, dysenteric, tubercular, syphilitic, and carcinomatous: I have seen examples of each of these. Many years ago I remember Lawson Tait saying in this room that he had noticed typhlitis was usually a residuum of typhoid fever. I remember also how several distinguished seniors smiled at the assertion. The connection between the two maladies is now quite easy to understand, and that the one is sometimes a cause of the other there can be no doubt.

Kinks or twists of the appendix are usually congenital and obstruct by the "chokage" which results in every soft-walled

tube when it is acutely bent or twisted upon itself in any direction.

Occlusions of the appendix are where the canal of the appendix is organically obliterated in a part only of its length, so as to leave on the distal side of the obliteration a closed cavity lined by mucous membrane, more or less normal. Inflammatory effusions within such cavities are practically abscesses *ab initio*; as they cannot empty themselves along the appendix into the cæcum; their contents can only escape by bursting into the peritoneal cavity, the intestines or the adjacent cellular tissue. I have met several examples of "occluded" appendices and have typical specimens in my possession.

Foreign bodies, the majority of which are fæcal concretions, may both irritate and obstruct. They become obstructing agents when they endeavour to escape along the proximal part of the canal towards the cæcum. They may block up the outlet of the organ just as a gall stone does the cystic duct, or a renal calculus the ureter, and the cavity of the appendix on their distal side then becomes distended by its own products. The consequences of this increasing distension constitute, as I have already said, the real dangers of "appendicitis," and vary in their kind according to the distensibility and position of the appendix, and the character of the inflammation by which it is affected. We are living in an age of "organismal pathology," and it is now the fashion to seek explanations for every morbid process by the aid of aniline dyes and high power immersion lenses. I am sorry to say that my own experience with these things is limited and I am not in a position therefore to say much of them or their revelations from personal experience, but as I have met with appendicitis in practice I find little that cannot be satisfactorily accounted for by the older and coarser, but none the less sensible and reliable, pathology of the pre-bacterial period. I am assured that the alimentary system of a healthy human being is full of both peaceful and warlike organisms from one end to the other, and I do not question the statement for a single moment, but I am at a loss to understand—except

on the mechanical theory I am advocating—how it is that these little pugnacious beasts attack their host only when they happened to be quartered in so small and so functionally unimportant a structure as the vermiform appendix.

In illustration of the mechanical theory I am advocating let me describe the naked-eye morbid processes seen in a case of acute gangrenous appendicitis, such as I had personal experience of between three or four months ago. An old concretion in the appendix of long standing—probably two or three years—which had never given rise to definite symptoms of any kind; the distal third of the organ dilated into a cavity capable of containing the end of a finger; catarrh of the large intestine following a too free indulgence in green salad and attended by dull epigastric pain and slight looseness of bowels. A few hours later, acute pain in the appendix region and a tender well-defined finger-like swelling, palpable through the abdominal wall; twenty-four hours later still, a sudden giving way of the distended organ. The abdomen being immediately opened, a grey sloughing flaccid appendix was discovered with a concretion peeping through a perforation in its walls at the proximal end of the cavity, and blocking the undistended part of the appendicular canal. What was the exact explanation of the primary catarrh of the colon I know not; but I do know that “catarrhs” of the same colon had occurred often during the previous forty years. The gangrene of the appendix however was clearly the result of the pressure of its contents within its cavity, the tension of which contents becoming higher than that of the blood within the vessels of the enclosing walls, circulation was arrested and local death in mass followed. The process was identical with the sloughing of skin seen in acute phlegmonous cellulitis of a limb, where, if timely multiple incisions are made so as to relieve the underlying tension, circulation is restored and gangrene averted. The peritonitis which follows after the escape of a considerable quantity of fetid fluid into the abdominal cavity is of course easy to understand. This acute form of appendicitis is usually seen

in first attacks, and a concretion is generally present; it is most commonly met with in young adults.

In the less acute cases the canal of the appendix behind the obstruction becomes more slowly distended with pus, and opens then just as does an abscess elsewhere, by the progressive softening of a small area in its wall, a point in which ultimately gives way and allows the contents of the cavity gradually to escape. Whilst this softening process is going on the peritoneal surface of the appendix becomes affected by adhesive inflammation which sticks the organ to the peritoneum of any part in contact with it, so that when leakage takes place it is not into the open cavity of the abdomen, but into a localized area of peritoneal adhesions. If the quantity of escaping contents is small and not highly irritative this peritonitis will remain localized, and the leaking fluid confined within its area; but if the inflammatory products continue to increase until they rend asunder their surrounding protective adhesions, the general cavity of the peritoneal becomes affected.

The contents of an inflamed appendix after being pent up for a while may find their way along the natural route to the cæcum; cases ending in this manner are not uncommon, and to them only the simple term "appendicitis" should, I think, be applied.

The signs and symptoms of appendicitis are too many and too variable to be considered in a single paper, but there are two upon which I should like to say a few words, viz., pain and inflammatory swelling. The pains of appendicitis are due to two distinct conditions, viz., distension of the appendix, and inflammation of the peritoneum or cellular tissue. The first always precedes the others and differs from them in character and in locality. They are, however, quickly merged together in the ordinary type of case, and it requires, therefore, careful and early investigation to discriminate between them. Appendicular pain is not always severe at its first onset, and is not often referred to the appendix region. It is frequently felt on waking in the morning, and is commonly epigastric in position.

Usually within twelve hours, however, it extends to the iliac region. Continuous severe aching pain during the early days of the attack is of grave moment, and is typically seen in the acute gangrenous form of the disorder. It is due to obstruction of the appendix, is temporarily diminished when the organ gives way, and is shortly followed by the more paroxysmal pains of peritonitis.

Heat, tenderness, hardness, and swelling are essential features of every inflammation, and must be present therefore in all cases of appendicitis. That they may not always be appreciable by physical examination I admit, but they are often overlooked when they are quite discoverable; and inasmuch as the "presence of a tumour" is the chief diagnostic sign of the affection we are discussing, it is necessary that we should give great attention to this feature in our examination. I have already said, that although the base of the appendix is fairly constant in its anatomical position, the tip of the organ may swing in any direction, and the tumour therefore which attends or results from its inflammation may develop at any part within reach of the appendix; for working purposes we may describe them as Iliac, Pelvic, Lumbar, Abdominal, and Retro-cæcal.

Fortunately for our patients iliac swellings are the most common and are easily palpable in the right iliac fossa, and their diagnosis is simple enough; but when the iliac tumour is absent diagnosis is a less easy matter, careful examination however will nearly always reveal the presence of swelling in one or other of the positions already named.

The pelvic variety lies in Douglas's pouch and can be felt by examination from below, either per rectum or vaginam, when absolutely nothing is to be discovered by palpation through the abdominal wall. Rectal or vaginal examination should be a routine procedure in every case of inflammatory abdominal disease.

The lumbar variety lies deep in the lumbar region, sometimes extraperitoneally in the connective tissue behind the bowel and

below the kidney, and sometimes intraperitoneally outside the ascending colon. It is easily overlooked, particularly in well-developed or stout people; a distinct tumour cannot always be made out, but a comparative examination with the region of the opposite side readily reveals the presence of "fulness."

The abdominal variety may be situated in the epigastric, hypogastric, or right hypochondriac regions, often in the neighbourhood of the umbilicus, either above, below, or to either side of that structure. Careful comparative palpation cannot fail to disclose such swellings. I have seen the tip of a long appendix in contact with the under surface of the liver.

The retro-cæcal variety is next in frequency to the iliac, and lies at the back of the cæcum, at the level of the pelvic brim and opposite to the sacro-iliac joint. It can be felt only on deep backward palpation rather as a fulness than a distinctly localized tumour. It is usually resonant on percussion for the reason that the head of the cæcum lies in front of it, and is often mistaken for feces in the large bowel. A finger passed high up in the rectum and to the right sometimes appreciates the lower limit of the inflammatory area.

There is one type of appendicitis in which "tumour" is conspicuously absent, viz., the acute gangrenous or perforative variety with wide spread peritonitis, where everything is lost in the general abdominal distension; although in these cases a tumour formed by the distended appendix can usually be felt before rupture has taken place.

On the question of treatment there is still something to be learned. At the commencement of an attack it is necessary to clear out the bowels; calomel and castor oil are the best remedies for the purpose, followed by salines and belladonna. Morphia and opium are dangerous comforters, and should not be given during the first few days of the attack if only for the reason that they "mask" symptoms, and make it almost impossible to interpret clinical phenomena with promptitude and with precision. Their judicious administration *after* an accurate diagnosis has been made is another thing altogether. I think the

question of operation should be before us from the very outset of an attack, because if it is to be of service in some of the varieties of the affection it must be done within the first 36 hours. It is often a difficult question to decide, but I am convinced that whilst there are clear indications for surgical interference in some cases and for non-surgical interference in others, there is a large class open to doubt; and in all these I think operation is the safest alternative. I have never been disappointed by operating too early in such cases, I have often had reason to regret delay.

Before referring in detail to operative treatment, I should like to say a few words on the question of suppuration. It is generally believed that cases of appendicitis may be divided into two classes, non-suppurative and the suppurative; that the former are those which treated medically recover without operation; whilst the latter are dealt with by the surgeon. I believe this to be an error. I think in nearly every case where the disease extends outside the appendix and a tumour is palpable that pus is present. I have never operated without finding it, although I have cut into many where opinions have been given that surgical interference was not indicated. I believe that many suppurative cases get well under the expectant method, but in spite of this belief I consider such treatment is wrong and is much more risky than that by operation. Years ago, before we knew what we know to-day, I have seen the abscesses of "perityphlitis" discharge themselves by opening spontaneously into the rectum, and most satisfactory results have followed. The appearance of pus in the fæces, and diminution in size of the tumour were conclusive as to what had occurred; but if, when the tumour begins to shrink, pus is not seen in the motions, it has become the custom to say that suppuration has been averted and that simple resolution has taken place. In such cases pus may not be seen in the excreta for the reason that the abscess has opened into the cæcum or small intestine, and the pus entering there becomes incorporated with the liquid contents of those parts of the alimentary tract, and has no longer its

naked-eye characteristics by the time it is discharged from the anal outlet. If time permitted, I could furnish indisputable evidence which absolutely settles the question of suppurative cases getting quite well without operation and without external abscess forming.

Operation having been decided upon, the question arises as to where is the best place to make your incision. There is no doubt that most cases can be readily dealt with through the well-known oblique incision in the right inguinal region, whose centre lies at a point one and a half inches from the anterior superior iliac spine on a line drawn to the umbilicus. This incision is well adapted to the iliac type of tumor, but is less convenient in the other varieties. Lumbar swellings require an opening much farther back, and I have often found the common incision for lumbar colotomy most suitable to them. The drainage is excellent, and the peritoneal cavity is in no way disturbed.

The abdominal form should be dealt with by incising over the most prominent part of the tumour wherever it may be.

Easy access to the retro-cæcal collection is got through an almost horizontal wound made above the front of the iliac crest. The peritoneum is opened and the drainage carried through it, and the route is shorter with this incision than the one most commonly made.

The pelvic variety is the most difficult and the most serious of all to deal with, either by the oblique iliac incision or by a median incision made above the pubes, for the reason that healthy areas of the peritoneal cavity often have to be opened to get access to the abscess, and general peritoneal contamination is likely therefore to occur. The deep uphill drainage of a suppurating pelvic floor, too, is not always satisfactory; for these reasons I have practised and advocated in suitable cases the opening of pelvic collections through the posterior vaginal fornix in women and through the rectum in children and men. The operation is easily done in the lithotomy position; a puncture being made through the thin-wall of the rectum or

vagina through a Sim's speculum with a narrow-bladed scalpel, the opening dilated with a forceps, and a strip of iodoform gauze inserted to keep the wound edges from immediately closing. The opening needs no subsequent dressing of any kind. The drainage is perfect, and the shock of the operation nil. I think it the best procedure in those cases where no tumour can be felt by abdominal palpation, and where fluctuation in Douglas' pouch is clearly evident to the examining finger in the rectum or vagina. I have done the operation several times, and with satisfactory results. I have many times dealt with these pelvic cases by the ordinary incisions and with success, but I have sometimes lost a patient who might have been saved by the simpler procedure.

For the drainage of appendical suppurations there is nothing better than the rubber tube surrounded by a packing of iodoform gauze. The tube may be withdrawn early, and the gauze comes away usually within a week and may be renewed if necessary. A narrow single strip carried lightly into the depths of the wound is all that is required—there is no need for the painful stuffing so often seen.

I think great care should be given to the suture of the parietal wound, even where drainage is arranged for. This can be best done by interrupted fish gut sutures passed carefully through all the layers of the abdominal wall. This thoroughness can only be secured by seeing that each separate layer in the sides of the wound is systematically transfixed by the needle.

The appendix should always be removed if it comes readily to hand, but it is safer to leave it if there is likely to be much separation of adhesions in getting it away. When it is left behind, a few days after operation it occasionally happens that fæces appear in the discharge from the wound, and anxiety as to the soundness of the cæcal wall is often felt, but usually the fæces come through the open stump of the appendix and no harm follows, the majority healing soundly in the end.

Operation specially done for the removal of a diseased appendix during an interval between attacks, has become a well established procedure, and its results are extremely satisfactory.

As a rule, it is best done through the oblique iliac incision. McBurney's method of traversing the abdominal muscles by tearing the fibres apart in their length instead of cutting across them gives limited space to work in and is suitable only to cases when the appendix is near the surface and can be got at readily. When the abdomen has been opened difficulty is sometimes met in finding the appendix at all ; but the rule that the vertical bands on the cæcum will guide you unfailingly to its attached end has no exceptions. When the appendix has been isolated I think it is best amputated by the coat-sleeve method, the outer layers of peritoneum and muscle being divided and its inner left unopened, drawn out, tied flush close to the cæcum and cut off short, the outer layers falling over the end of the stump like a long prepuce. When much difficulty is met with in separating the appendix from its surrounding adhesions, I practice a method of elamination which is of great practical value ; it is simple, safe and effective. Instead of removing the appendix altogether I strip out its inner lining by making a longitudinal incision through the peritoneal and muscle layers in their whole length, leaving the tube of the internal coat unopened. When this inner lining has been stripped throughout its whole length it is tied close to the cæcum, cut across and the cut end covered by the outer layers falling over it. The sero-muscular walls of the appendix being freed of their secreting lining heal up soundly like muscular tissue elsewhere and the cavity of the appendix is permanently obliterated. Drainage may be dispensed with in the majority of cases. I close the wound by simple interrupted fish-gut stitches in the manner already mentioned. The sutures are tied tight enough only to bring the sound edges together and are removed on the 7th or 8th day. I seldom use a buried suture and have no fear of hernial formation through my scars.

The after treatment of appendical operations, is that common to the general run of abdominal sections.

SOME PRACTICAL POINTS IN CONNECTION
WITH THE
TREATMENT OF STRANGULATED HERNIA.*

BY LEONARD GAMGEE, F.R.C.S.,
ASSISTANT SURGEON TO THE GENERAL HOSPITAL;
SURGEON TO THE CHILDREN'S HOSPITAL, BIRMINGHAM.

It is my intention this evening to deal with some points connected with the treatment of strangulated hernia and with some of the difficulties with which the surgeon is brought face to face during the operation of herniotomy. To deal at all fully with the subject of these difficulties would require far more time than is at my disposal, and so I shall refer only to those, which I myself have met with in an experience of 49 operations for strangulated hernia.

Before the operation of herniotomy is spoken of, there are means of treatment, other than operative, which require a short consideration. These are taxis, position, the ice-bag, the warm bath, etc. Taxis should be tried as soon as the strangulation is diagnosed. In the large inguinal herniæ of adults it may be continued for five or perhaps even for seven or eight minutes; but in small, tense inguinal herniæ and, above all, in femoral herniæ, taxis must be used with the greatest possible caution and then only for from three to five minutes. In fact, personally I make it a rule in the case of tense femoral herniæ in thin patients not to try taxis until the patient is anæsthetised and everything is ready for operation; for it is only in a minority of cases that strangulated femoral herniæ can be returned without operation, and it is especially in this kind of hernia that the bowel is liable to be injured by taxis.

* A Paper read at a Meeting of the Midland Medical Society, on Nov. 13, 1901.

Position is one of the most valuable aids to the reduction of a strangulated hernia, but it is not equally valuable in all cases. In young babies especially, position is a great help, and it has been my experience at the Children's Hospital that the best thing to do in the case of a strangulated inguinal hernia in a baby is to sling up the patient's legs on the ordinary gallows splint as used for the treatment of fractured femur in an infant, and that in a short time, in the majority of instances, the hernia goes back. In fact, operation for strangulated herniæ in an infant is required in a very small proportion of cases. As regards inguinal herniæ in adults, I think it may truly be said that a large hernia is more likely to go back than a small one; and certainly in these large herniæ, position is a most valuable aid. In these cases the patient should be laid flat on his back in bed and the foot of the bed elevated on the seats of two wooden chairs. I refer to this latter point, because I have so often seen the bed raised simply on the ordinary 4-in. blocks used in connection with an extension apparatus—quite a useless proceeding. In strangulated femoral hernia, the patient's pelvis should be raised on a pillow; but in these cases position is of little, if any, good. I must admit that I have but little faith in the application of an ice-bag as an aid to the return of a hernia, and feel sure that its use over a tense hernia in a thin patient is open to the very grave objection that it has a great tendency to cause stagnation of the circulation in the wall of the gut. I was first taught this while House-Surgeon at the Queen's Hospital, by Mr. Bennett May, and disregard, not I may say on my part, of his teaching seemed to cause the death of one of my patients, a man aged 22, who had an enormous right inguinal hernia strangulated, and, before I saw him, an ice-bag had been on the hernia continuously for two hours. The sac contained about three feet of very dark gut, quite cold, and that part of the gut which lay in the anterior part of the sac was the worst in these respects. The stricture was not a particularly tight one, and after operation the case ran quite an aseptic course, but for some three weeks the patient complained of pain and marked tenderness over the right lower

abdomen. In three months time he was brought back suffering from acute intestinal obstruction, which I found to be due to general dense adhesions matting together some coils of small intestine in the right iliac region. The patient died, and I cannot help thinking that the cause of the plastic peritonitis producing the adhesions was the cold and congested state of the gut due to the prolonged use of the ice-bag.

The hot bath in the treatment of strangulated hernia I have no experience of, for I have never employed it, deeming that any good it does by relaxing the tissues will be far exceeded by putting the patient under a general anæsthetic. Opium, to my mind, should never be given; it will mask the urgent symptoms, and will avail little towards the reduction of the hernia.

I have dwelt for a time on the relative value of these simple measures in the treatment of strangulated hernia, not that I think that operation should ever be delayed, when taxis has failed; but because there is often an interval of some hours before operation is possible, and during that interval these measures may be carried out, the result often being that, whereas taxis in the first instance failed, yet the hernia becomes reduced when the patient is kept for a time in a suitable position.

It is not my intention to enter into all the details of the operation of herniotomy, but shall confine myself to remarks upon a few practical points in connection with it. To take inguinal hernia first, it may be said that it is always most important to keep the incision as clear of the scrotum as possible, and this for two reasons: (1) The scrotal skin is difficult to render aseptic, and (2) By making the incision high up, the external abdominal ring is exposed and the constriction much more easily exposed and divided. Another point I wish to lay stress upon is this, that the constriction should as far as possible be exposed before it is divided, for the division of an exposed constriction is a most simple matter; while on the contrary, the division of a constriction quite out of sight must always be a more or less hazardous proceeding. In the case of

inguinal herniæ, the edge of the external ring first requires division, and, in doing this, I always slide under it a flat hernia director. It is the fashion, I know, to decry the use of the hernia director; but it always seems to me to be a most useful instrument. It slides easily under the constriction, keeps the bowel well back, and, if used gently with the stricture well in view, cannot, so far as I can see, do any harm. In a large proportion of strangulated inguinal herniæ the gut is still irreducible after the edge of the external ring has been divided, and it cannot be reduced until the neck of the sac has been divided; in other words, the constricting structure, or one of the constricting structures, is the neck of the sac. At the present day, when it is the custom to always open the sac, it is difficult to say how often this is the case: and to answer the question, it is necessary to go back to the time when, if possible, the hernia was returned after division of the external ring without the sac being opened. On this point Mr. Bryant says, that, in 44 inguinal herniotomies, the sac was not opened in 20 per cent.; in other words, the neck of the sack had to be divided in 80 per cent. of the cases, before the hernia could be returned. As Macready says, these figures are to a certain extent vitiated by the fact that the sac was sometimes opened for other reasons than for the division of its neck. Still, on the whole, the figures probably give us a pretty correct idea. Before the return of the gut it is most important to carefully examine the line of constriction; for, while the loop of gut as a whole may look to be in good condition, there may yet be a small gangrenous patch along the line of constriction, which, if not detected, will almost certainly cause the patient's death. If the patient's condition will allow, it is always well to do as effectual a radical cure as possible, and, even if the inguinal canal is not sutured, the neck of the sac should be ligatured, so preventing any pus that may form in the wound infecting the peritoneal cavity. The various operations for radical cure I shall not further allude to, for to do so would be outside the scope of this paper.

As regards the operation for femoral hernia, the same general

remarks are applicable, but it has been my experience that in a comparatively small number of cases is the constriction situated in the neck of the sac, while in these herniæ the constriction by Gimbernat's ligament is usually very tight, and hence it is even more important than in the case of inguinal hernia to examine the line of constriction round the bowel. In femoral herniæ, also, as good a radical cure as possible should be done after the relief of the strangulation.

To pass now to the question of the after-treatment of cases of herniotomy, the first and in some ways the most important point to discuss is that of diet. In the cases, upon which these remarks are based, it has been the rule to give nothing by the mouth for 24 hours, then small quantities of milk and soda every hour, the amounts given being gradually increased and the intervals lengthened. Nothing solid has been given till the expiration of a week from the time of operation, and then only if the bowels have been well moved. If the patient's general condition was bad, nutrient enemata were given during the first 24 hours. One of the patients was 3 weeks and another 17 days old, and to both of these feeding by the mouth was begun very soon after operation. In the absence of contra indications, no effort was made to get the bowels open until the expiration of a week, and then always by enema. If the bowels acted naturally before that time all well and good; and I have seen aperients given at the end of three days, but I cannot help thinking that to do this is to run a considerable risk. I never give opium in any form after herniotomy.

In considering the main complications and difficulties met with in this series of cases, it will be well to take the most important complication first, viz., gangrene of the bowels. This is, of course, always a serious complication, but it is difficult to compare one case with another, for the prognosis depends so much on the amount of bowel which is gangrenous. In one case there is simply a small patch of gangrene along the line of constriction, while in another there is gangrene of several inches of bowel. I have already referred to the importance, after

dividing the strangulating structure, of always examining the line of constriction along the bowel, for this is by far the most common spot for a small patch of gangrene to be present in. In my 49 cases there was gangrenous gut in six, and in one of these the gangrene simply affected a small area along the nipped line. This was in the case of a man whose hernia had been strangulated for several days, and who was in a very bad general condition, so bad in fact that immediate enterectomy and end to end junction seemed to be quite out of the question; and so, to avoid the formation of an artificial anus, I invaginated the gangrenous patch, and stitched the two edges of bowel over it by six Lembert's sutures. The patient died at the end of 36 hours, the cause of death being broncho-pneumonia and heart failure, and it was found (*post-mortem*) that the method of dealing with the gangrenous bowel seemed to have been successful, for the two faces of bowel along the line of suture were adherent, and there had been no leakage. Among the cases now under review there was one, that of a ventral hernia in a man, in which the tissue over the sac was sloughing and emphysematous, the patient being in far too bad a general condition to allow of anything like a set operation being done. Accordingly, a single free incision was made right into the interior of the gangrenous gut, but the patient died a few hours afterwards. This is an unsatisfactory treatment, but it really is the only practicable one in this class of case, and can be defended on the grounds that it does not add to the shock, while, if the patient lives long enough, it is probable that the obstruction will be relieved, and an artificial anus established.

It is, however, in neither of these classes of cases of gangrenous gut that any great problem as to treatment presents itself; but such a problem does present itself in those cases in which there is a patch of gangrene too large to be invaginated, and yet the patient's condition is good enough to allow of an anæsthetic being given and of a formal operation being done. The desirable treatment in cases of this kind is, of course, to excise the gangrenous portion and then to make an end to end

junction by suture or with a Murphy's button. But the patient is always very ill and so long an operation may kill him. Hence, the problem presents itself to the operator—Shall an artificial anus be made which will require to be closed by a subsequent operation, or shall an immediate enterectomy be done? The first course has a smaller immediate mortality, and the second, if the patient lives, leaves no artificial anus, and, therefore, a second operation is not required. On the whole, I think that it is better to adopt the first course and to operate in two stages. I have had four cases of this kind. In two, an immediate enterectomy with end to end union with a Murphy's button was done, but both patients died, one from shock and the other from leaking at the line of junction. In two other cases an artificial anus was made. One of these patients died at the end of 24 hours from shock; the other, on the third day, was so much better that I did an enterectomy and put in a button, the result being that the patient recovered. Sir F. Treves, in his book on Operative Surgery, advises that, in making an artificial anus, the gut should simply be incised, without being pulled down into the wound and without the constriction being divided. He says that the flow of fæces will be established in a few hours, and he defends this method of treatment on the ground that by division of the stricture there is a probability of the general peritoneal cavity being infected. I have seen this practise followed on several occasions, but not once was any motion passed, the patient in each instance dying without the obstruction being relieved. The risk of infecting the general peritoneal cavity seems to me to be small, and to be more than counterbalanced by two advantages, viz., (1) The relief of the obstruction is much more certain, and (2) The gut can be pulled down and fixed to the edges of the wound, the risk of peritonitis from the giving way of a gangrenous patch on the abdominal side of the constriction being prevented. Consequently, in making an artificial anus in these cases, I have divided the constriction and pulled the gut well into the wound.

It seems to me to be worth while drawing attention to an

arrangement of the sac of a strangulated femoral hernia, which I have met with in three cases, which is, therefore, presumably, not very uncommon; but which may be puzzling at the time to the operator, as it was to me the first time I met with it. This can best be described by shortly quoting the details of a case, that of a woman of 60, upon whom I operated three years ago, and who had a right femoral hernia, which had been strangulated for 48 hours. On opening the sac, a quantity of blood-stained fluid was let out. No gut or omentum was visible, but the floor of the sac was bulged forwards. On the sac being slit open from end to end, this bulging floor was found to have an opening in it at its lower end, about the diameter of a lead pencil, through which gut could be seen lying in another compartment.

This cleared up the difficulty; the floor of the sac was split up, the gut exposed, and the operation completed in the usual way. An exactly similar condition was met with in another case, while in a third, the septum was quite complete, the case evidently being one in which the distal portion of the sac had been shut off, so forming a hydrocele of the sac, while the gut had passed into the proximal portion and had become strangulated.

Another of the difficulties, or rather dangers, met with in operating on a strangulated femoral hernia is the presence of an aberrant obturator artery. The obturator artery usually arises from the internal iliac; but in the proportion of 1 in $3\frac{1}{2}$ subjects, it arises from the deep epigastric; and then, to get to the obturator foramen, it passes backwards usually on the outer side of the femoral ring and so is out of harm's way in an operation for strangulated femoral hernia. But more rarely, it passes backwards along the inner side of the femoral ring, that is, along the free edge of Gimbernat's ligament, and in this case will be divided when Gimbernat's ligament is cut by the hernia-knife. This happened in one of my cases. There was no question as to what had happened, for the bleeding was very free. The treatment adopted was to return the gut as quickly as possible, then to divide Pourpart's ligament and the lower part of the abdominal wall. The vessel was then easily secured. It was

quite evident at the time that it would be no good trying to find the artery without a very free division of the parts.

Only once have I met with any really serious difficulty from adhesions. This was in the case of a very large umbilical hernia, on the skin covering, which was an ulcer the size of a five-shilling piece. On exploring the contents of the sac, it was found that the base of the ulcer was so densely adherent to a loop of small intestine that it was quite impossible to separate them. The surface of the ulcer was, therefore, scraped and swabbed over with pure carbolic acid; and the piece of bowel, with the base of the ulcer still adherent to it, returned into the abdomen, a large gauze drain being inserted. There was no peritonitis, and, with the exception of the fact that the wound healed slowly, the patient did perfectly well.

As I have said, I have operated altogether on 49 cases of strangulated hernia. Of these 40 recovered and 9 died, giving a mortality of 18·3 per cent. Excluding 1 case, in which there was gangrenous omentum, and 6, in which there was gangrenous bowel, there remained 42 cases, with 3 deaths—a mortality of 7·1 per cent. This is exactly the same death-rate as that after taxis, according to Bryant, who is quoted by Macready. The death-rate in 1,063 cases of strangulated hernia operated on in Hospital, as given by Macready was 29·7 per cent. During the 10 years from 1891 to 1900 inclusive, there were 203 cases of strangulated hernia operated on at the General Hospital, of which 55 died. This gives a mortality of 27·09 per cent. Adding these figures to Macready's, we have 1,266 cases, with a mortality of 28·3 per cent.

TABLE OF CASES OF HERNIOTOMY.

NO.	AGE	SEX	VARIETY	RESULT	REMARKS
1	64	F.	Right femoral	C.	Aberrant obturator artery cut in dividing Gimbernat's ligament. Poupart's ligament divided and vessel secured.
2	60	F.	Right femoral	C.	An almost complete septum dividing sac into two portions.
3	60	F.	Right femoral	C.	
4	38	M.	Right inguinal	D.	Large mass of gangrenous omentum removed.
5	22	M.	Right inguinal	C.	
6	64	F.	Right femoral	C.	
7	17 days	M.	Left inguinal	C.	
8	60	F.	Left femoral	C.	
9	39	F.	Right femoral	C.	After opening sac, gut was returned without division of stricture.
10	66	M.	Right inguinal	C.	Large mass of omentum removed.
11	72	M.	Right inguinal	C.	
12	76	M.	Right inguinal	C.	
13	45	F.	Right femoral	C.	
14	53	F.	Right femoral	D.	Sac contained pus and gangrenous small intestine. Stricture divided; gut drawn down; artificial anus made.
15	22	M.	Right inguinal	C.	Was re-admitted in three month's time suffering from acute intestinal obstruction due to general adhesion in right lower abdomen. Operated on, but died in a few hours.

NO.	AGE	SEX	VARIETY	RESULT	REMARKS
16	32	F.	Left femoral	D.	Gangrenous gut excised; end-to-end junction with Murphy's button. At end of 24 hrs. pt. aborted. Death in 48 hrs. from leaking along line of junction.
17	56	F.	Left femoral	D.	Death in 24 hours from heart failure.
18	20	M.	Right inguinal	C.	
19	33	F.	Right femoral	C.	
20	4 mths.	M.	Right inguinal	D.	Complete sac containing cæcum and vermiform appendix. Death at end of a week after operation from bronchitis.
21	50	M.	Left inguinal	C.	Loop of small intestine strangulated by band within sac.
22	30	M.	Right inguinal	C.	
23	60	M.	Left femoral	C.	Mass of omentum removed.
24	45	F.	Left femoral	C.	
25	45	M.	Left femoral	C.	
26	54	M.	Left inguinal	C.	
27	84	M.	Right femoral	C.	Almost complete septum across sac.
28	54	F.	Right femoral	C.	
29	?	M.	Right inguinal	C.	
30	3 weeks	M.	Right inguinal	C.	
31	58	F.	Left femoral	C.	Contained omentum only.
32	81	F.	Right femoral	D.	Died of heart failure on 4th day.
33	56	F.	Right femoral	C.	Contained gangrenous small gut. Stricture divided; gut pulled down and artificial anus was made. On 3rd day enterectomy with end-to-end junction by Murphy's button.

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NO.	AGE	SEX	VARIETY	RESULT	REMARKS
34	37	M.	Left inguinal	C.	Cord spread out on anterior surface of an enormously thickened congenital sac.
35	54	F.	Left femoral	C.	A complete septum across interior of sac.
36	?	F.	Left femoral	C.	
37	45	M.	Right inguinal	D.	Small gangrenous patch on gut.
38	25	M.	Right inguinal	C.	
39	64	M.	Right inguinal	C.	Mass of omentum removed.
40	49	M.	Ventral	D.	Gangrenous small intestine. Stricture divided and artificial anus made.
41	77	M.	Ventral	C.	
42	52	F.	Right femoral	D.	Gangrenous small gut; immediate enterectomy with end-to-end union by Murphy's button. Death in 20 hours from shock, no leakage.
43	65	F.	Left femoral	C.	Mass of omentum removed.
44	14 mths.	M.	Right inguinal	C.	Contained cæcum. A distinct sac present.
45	47	F.	Ventral	C.	Base of ulcer on skin over sac adherent to loop of small gut. Surface of ulcer scraped and swabbed with pure carbolic acid. Loop of gut, with base of ulcer adherent, returned into abdomen. Large gauze drain.
46	63	M.	Right inguinal	C.	
47	48	M.	Right inguinal	C.	
48	51	F.	Ventral	C.	
49	49	F.	Right femoral	C.	

ON ACUTE HYDRAMNIOS:
WITH NOTES OF A RECENT CASE.*

BY C. E. PURSLOW, M.D. (LOND.), M.R.C.P.,
HONORARY OBSTETRIC OFFICER, QUEEN'S HOSPITAL;
ASSISTANT TO THE CHAIRS OF MIDWIFERY AND GYNÆCOLOGY
BIRMINGHAM UNIVERSITY;
CONSULTING SURGEON, BIRMINGHAM LYING-IN CHARITY.

CASES of Acute Hydramnios are of such rare occurrence that I have thought it worth while to bring before your notice an account of one which has occurred lately in my hospital practice, which is the first of the kind that I have seen.

The following are the notes of the case. The patient, who was aged 34, was admitted to the Queen's Hospital, on Aug. 24, with the following history:—There had been seven previous pregnancies, six going to term and the youngest child being 2 years and 3 months old, one terminating in miscarriage at $4\frac{1}{2}$ months, seven years ago. Patient was quite regular until April last; she then thought that she was pregnant, but as she was still losing every three weeks, she came up to the hospital on April 22nd and was examined, and I made a note in the out-patient book that I considered her to be about eight weeks pregnant. She did not come again, but as she continued losing every three weeks she began to think that after all she was not pregnant.

Six weeks before admission her abdomen began suddenly to enlarge, and this enlargement advanced rapidly until she came in. During this time she had been suffering from severe pain in the abdomen, which had prevented her sleeping. She had also complained of shortness of breath, and constant vomiting and was rapidly losing flesh.

On examination, her abdomen was found to be very much swollen, the girth at the umbilicus being $43\frac{1}{2}$ inches; the swelling

* A Paper read at a Meeting of the Midland Medical Society, November 27th, 1901.

presented all the physical signs of a large ovarian cyst; there was nothing to be felt of a foetus on abdominal palpation. The cervix was softened.

Aided to a great extent by the diagnosis of pregnancy made on April 22nd, the case was diagnosed as one of hydramnios, though it was difficult to believe that so large a tumour could be the distended uterus. The alternative diagnosis was pregnancy complicated by ovarian tumour, but the fact that no ovarian tumour was present in April made this diagnosis untenable.

On the day following admission the os had opened somewhat and a finger could be passed through it and a foetal head felt to be presenting, with very little liquor amnii in front of it.

On the evening of the next day pains commenced, and at 7.15 a.m., on the 27th, a foetus of about six months development was expelled, together with a few ounces of liquor amnii. Another bag of membranes with a foetus was felt, and at 8.30 a.m., this foetus was expelled together with a very large quantity of liquor amnii. $9\frac{1}{2}$ pints of this latter fluid was collected, and much ran away. There was some difficulty with the placenta, and after this was extracted, the uterus was washed out with hot water and soon contracted well.

The woman made an uninterrupted recovery. The foetuses were both females, the second one, which was much larger and better developed than the first, lived for 10 minutes. There was one placenta, the cord of the second foetus, as also the part of the placenta to which it was attached, was distinctly oedematous; the cord of the first foetus was thin. The first foetus weighed 22 oz., and its heart 60 grs. The second foetus weighed $28\frac{1}{2}$ oz., and its heart 132 grs.

In the few remarks I will make on this case I should like to confine myself principally to the clinical aspect and the question of diagnosis. A very excellent and exhaustive account of the pathology of this condition and of the literature of the subject, was written a short time ago by my colleague, Dr. Thomas Wilson, and will be found in the Transactions of the Obstetrical Society for the year 1899. In this account, Dr. Wilson refers to

22 recorded cases of this condition, and, in nearly all points, the case I have here given agrees with those previously on record. Thus, the condition when found in twin pregnancies is nearly always associated with the unioval variety of twins. This variety is characterised by the twins having a common placenta and being of the same sex.

The twin associated with the excessive amount of fluid is always the larger, and its heart is found to be hypertrophied, and this cardiac hypertrophy is supposed to be the cause of the excessive secretion of liquor amnii. The thinness of the cord of the unaffected foetus has been frequently noted, but the oedema of the cord and the one portion of the placenta of the affected foetus, has been noted in one of the previously recorded cases only.

The non-hydraminotic foetus is almost invariably born first, as in my case, and its quantity of liq. amnii is frequently found to be less than normal.

The question of diagnosis is an important one, as in a large number of cases this condition has been mistaken for an ovarian cyst, and in some cases the abdomen has been opened under a wrong impression.

The history will frequently assist, as generally the signs are usually those of normal pregnancy for the first four or five months; in this case, however, there was no history of amenorrhœa.

As regards physical signs, the most important, of course, is the detection of the presence of a foetus by palpation or auscultation, but this is not by any means always possible.

Other valuable signs are the discolouration of the vaginal wall, and the softening of the cervix, and I would assign to the latter a very prominent place in the question of diagnosis. By these methods of examination the presence of pregnancy may usually be ascertained and the diagnosis of uncomplicated ovarian cyst or ascites excluded; but having ascertained the existence of pregnancy, the extreme size of the swelling will suggest the co-existence of an ovarian tumour, and this is the

most real difficulty in making a diagnosis. The rapid formation of the swelling should put us on our guard, as an ovarian tumour of the same size, even if associated with pregnancy, would have taken several months to have caused an equal enlargement of the abdomen.

When in doubt, the rule should be to wait, and if the distension be extreme and causing distress, removal of some of the fluid by tapping might be performed in preference to an exploratory abdominal section. The hydramniotic uterus has been many times tapped under a mistaken diagnosis and no harm has resulted.

As regards treatment, in the majority of cases no treatment is needed, for, when the distension begins to produce distress, the uterus evacuates itself. If this is not the case rupture of the membranes is indicated. This may be done by the sound. It is useless to temporise, or to attempt to draw off small quantities of the fluid in the hope of prolonging the pregnancy and getting a living child, for the children in these cases are almost invariably still-born, or, if alive, frequently are deformed.

For the notes of the case and for valuable assistance in the treatment I am indebted to Dr. H. F. W. Boeddicker, my House Surgeon.

REPORTS OF CASES.

NOTE ON A CASE OF SUPPURATIVE PERITONITIS
DUE TO PNEUMOCOCCAL INFECTION AND
ASSOCIATED WITH EMPYEMA.BY GILBERT BARLING, M.B., F.R.C.S.,
SURGEON TO THE BIRMINGHAM GENERAL HOSPITAL.

A GIRL, aged 9 years, was admitted to the General Hospital, October 3rd, 1899, for an acute abdominal illness. From notes kindly supplied by Dr. Wm. Murray, I learnt that about a month earlier she had suffered from sharp general pains, most marked in the limbs, and from a catarrhal condition of the base of the right lung. A week later, abdominal pain supervened, and was followed at an interval of some days by severe vomiting and diarrhoea, the pain being then very severe and the child extremely ill.

On admission, vomiting had ceased and the diarrhoea was much less, but the face was pinched and sunken and the patient was much wasted, tem. 100·4, pulse 140. The abdomen was generally distended and was slightly tender, dulness was absolute to 2½ inches above the symphysis pubis, and for another 2 inches above this resonance was much diminished. The base of the right lung posteriorly was dull with decreased vocal resonance and diminished breath sounds. The patient lay on one or other side with her knees drawn up, constantly moaning and occasionally crying out; the tongue was dry and furred. Urine, s.g. 1020, contained a cloud of albumen and a few pus cells.

There was but little change in the state of affairs during the few days following admission, the vomiting did not return and the diarrhoea ceased, whilst the pulse ranged between 120 and 140, and the temperature between 98 and 99·2. The

physical signs in the chest remained much the same, the abdomen was less distended, but the dulness at its lower part did not alter.

On October 9th an exploring needle found pus in the right chest, and the empyema was drained in the eighth-inter space near the posterior axillary line. Films made from the pus showed only a few pneumococci, and cultivation on agar failed to produce any growth.

On October 13th the note states that the abdominal dulness was spreading into the left flank, and that a thrill could be felt at the lower part of the belly. The abdomen was opened in the middle line, midway between umbilicus and pubes, and about a pint and a half of greenish odourless pus evacuated. The cavity was drained, but was not irrigated. Cultivations on blood agar gave, according to the report of the Pathologist, Dr. Macdonald, a pure growth of pneumococci.

Steady improvement followed the second operation, though convalescence was interrupted by a re-accumulation of pus which followed the removal of the abdominal drain on October 22nd. This further collection was drained through the old incision, and eventually, at the end of three months, the child was restored to excellent health, being plump and rosy, with the right lung well expanded, and no thickening or other defect noticeable in the abdomen.

This case is fairly typical of pneumococcal infection invading the peritoneum.

As often happens, the pleura was also involved; and, from the history of the first few days, it is not unlikely that there was a general pneumococcal septicemia. I have had several cases under observation, in which it is probable that peritonitis was caused by the same infection, but circumstances have prevented me from verifying them. It is a matter of importance that these pneumococcal infections should be separated in diagnosis from other varieties, especially from those arising in the vermiform appendix, for the operative measures required are different.

The points strongly in favour of a diagnosis of pneumococcal infection are the age of the patients, who are generally young children, as a rule of the female sex. The onset may be associated with general body and limb pains, diarrhoea is generally present instead of the constipation so common in appendicitis, and there is no particular localising pain as in appendical mischief. When the pus is evacuated it is odourless, and of a greenish colour, and there is a considerable tendency for it to find an escape at the umbilicus if it is left unrelieved.

The treatment required is: Evacuation by incision in the middle line of the abdomen, careful irrigation and drainage.

I regret that I did not irrigate in the case now recorded. as the thick layers and coagula of lymph would have been more easily removed thus, and convalescence hastened.

CASE OF CHRONIC MASTITIS SIMULATING
CARCINOMA,

UNDER THE CARE OF MR. BENNETT MAY,

BY E. GILBERT BARK, M.B., LOND.,

HOUSE SURGEON, QUEEN'S HOSPITAL, BIRMINGHAM.

E. V., a married woman, aged 38, was admitted, complaining of a lump in the left breast of two years' duration.

She has had four children, the last five years ago. The first three lactations were normal. At the last confinement the left breast was "hard," and the child refused to suckle at that breast. It gave her no trouble, however, until two years ago, when she discovered three small lumps in it, and found that the nipple was drawn down to one side. She states that the lumps have progressively enlarged since. She had no pain until two months before admission, when she began to have some shooting pain in the breast.

The woman was very anæmic—flabby, but stout. The left breast was evidently atrophied and the nipple greatly retracted; around the nipple were several small firm nodules, the largest being about the size of a small hazelnut. These were situated in a firm, somewhat indefinite mass, occupying the greater part of the breast, but having no distinct margin. This was adherent to the skin, and did not move freely on the pectoral muscles.

One gland on the outer wall of the axilla could be distinctly felt; this was hard, but not painful. No other axillary or other glands were discovered.

An incision into the tumour revealed a mass consisting of a series of small cysts, containing a thick caseous material, dried secretion, with a large amount of fibrous tissue surrounding the cysts. The breast, with a considerable area of skin was removed, together with the fascia covering the pectoral muscle. The axilla was opened and the enlarged gland removed with the breast, but the axilla was not cleared.

The breast tissue was almost completely replaced by the connective tissue and cyst formation; there was no definite tumour and the tissue was not indurated. The axillary gland shewed no change.

Microscopically, Dr. Stanley reports that a section shews an irregular fibrous matrix in which are scattered masses of adipose tissue and in which appear acini cut in various directions; there is a dense almost round-celled infiltration of the fibrous matrix, most marked around the acini; this infiltration can also be seen extending through the adipose tissue. The epithelial cells lining the acini show proliferative characters and seem to infiltrate the surrounding fibrous tissue. No distinct alveolar formation can be seen. The specimen shows the characters of a chronic mastitis.

The interest of this case lies in the fact, that clinically, it presented many of the characteristics of a slow growing cancer; so much so, that only a few weeks before admission, a distinguished London surgeon had pronounced it to be "undoubtedly carcinoma, needing immediate removal."

It evidently arose from some trouble during the last lactation, five years ago, which, although not acute enough to set up an active mastitis at the time, has led to the chronic infiltration.

The round-celled infiltration was very marked, microscopically, and apart from the history would almost suggest sarcoma.

I am indebted to Mr. Bennett May for permission to make use of these notes, and to Dr. Stanley for the pathological report.

A CASE OF EXTREME DEAFNESS WITH
TACHYCARDIA.

BY DOUGLAS STANLEY, M.D., M.R.C.P.

E. N., aged 29, Soldier, was sent to me by a medical man on account of extreme deafness with tachycardia. He had been invalided from South Africa for typhoid in the early summer, being discharged from hospital last July.

He arrived in this country in the latter half of August. On the 23rd of August, the deafness came on, and in two or three days had attained to a very marked degree.

I saw him early in September. He was a well-developed man, presenting little abnormal in his general appearance except the somewhat stolid look of a deaf person.

He complained of some breathlessness and nausea. His bowels were normally free; there was thirst. His tongue showed a slight degree of fur. He slept well.

Examination of the heart showed the cardiac impulse to be in the vertical nipple line in the fifth left space. It was rather feeble and indistinct. Both sounds were short and a little inclined to slap, and the long pause seemed a little curtailed. His pulse was then 144, and poor in quality. I was informed by Mr. Ballenden, who saw him soon after his return home, that it was even more frequent when he first came under observation.

The respiratory and other systems were examined, but no abnormal condition was found.

The deafness was so marked that only on shouting at the top of my voice could I make him hear.

No defect was found on examination of the ears, and the throat also appeared healthy.

He had not been taking any drug of importance. On the other hand he had been smoking a very strong form of twist, the quantity being eight or nine ounces per week, the price

rs. 4d. per pound, this being obtained in South Africa. How long this had gone on was not clear, but in any case he had a fair supply with him on board during the voyage home.

Being anxious to see the effect, I ordered him to give up smoking, and prescribed soda cum Rheo.

I admit that my attention was chiefly directed to the cardiac condition, which I, of course, took to be tobacco-heart, and the deafness was regarded as an interesting fact.

On his second visit, however, which was a month later, the man had greatly improved. His pulse was 90, and the general force of the heart much better. But the deafness, and here is the point of interest, had practically disappeared. He could answer questions asked in the ordinary pitch of voice.

On the right side a watch was heard at three feet distant, at two on the left. The tuning fork on the head showed a less degree of sound perception at the left side than on the right, thus corresponding to the watch test.

He had not smoked once since last seen; in fact he said he had given away his twist and burned his pipes.

From looking a stupid idiot he turned out to be a man of very fair mental power.

I asked him concerning his sight, and he said he had never been troubled with his vision in any way. Mr. Allport kindly examined his fields, especially for colours, and could not find any defect. I regret that this was not thought of when he was first seen, though the patient's deafness would have made it practically impossible.

The question is, What was the nature of the deafness? I thought on first seeing the patient that it was a relic of the typhoid fever, but his subsequent account of how it began and the normal appearance of the membranes rather negatived this view. Was it a toxic deafness similar to tobacco ambliopia? Its disappearance on withdrawal of the poison seems to support such an idea. I am not acquainted with a similar case.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

Session 1901-1902.

The Second Ordinary Meeting of the Session was held in the Birmingham Medical Institute, on November 14th, 1901, the President, Dr. E. MALINS, being in the Chair.

Thirty-nine members were present.

Confirmation of Minutes.—The Minutes of the previous Meeting were read, confirmed and signed.

Vote of Condolence.—On the motion of the President, it was resolved "That this meeting hereby records its sense of the great loss sustained by the Branch in the death of Mr. T. Vincent Jackson, a past President, and for many years a valued member of the Council; and it begs to offer its sincere condolence to Mrs. Vincent Jackson and the other members of Mr. Jackson's family in their bereavement."

Town Member of Council.—The President announced the election of Mr. H. Eales as a Town Member of the Council.

Country Members of Council.—The following gentlemen were nominated for the two vacancies, viz., Dr. E. Deanesley, Mr. J. F. G. Pietersen, Dr. R. Shiels, and Dr. T. W. Thursfield. Mr. A. Loxton and Mr. Smallwood Savage were appointed scrutineers, and upon their report of the ballot the President declared that Dr. T. W. Thursfield and Dr. E. Deanesley were duly elected.

Election of Member of Branch.—Mr. Alfred Alexander, L.R.C.P., M.R.C.S., Wellesbourne, Warwick, proposed by Mr. Morrison, was elected a Member of the Branch.

Ovarian Cyst.—Mr. John W. Taylor shewed an Ovarian Cyst, removed by vaginal cœliotomy from a patient who had been in labour for eight hours. The tumour was filling the pelvis and the head of the child therefore remained above the brim. Immediately after the operation was over, delivery was effected by forceps while the patient was still unconscious, and the operation area was cleaned and dressed before the patient was replaced in bed. Both mother and child did well.

Retro-peritoneal Cyst.—Mr. Taylor also shewed a retro-peritoneal cyst removed from a single woman, aged 43, who had history of tumour extending over several years. The tumour was in the position of a distended gall-bladder and was accompanied by occasional attacks of violent pain and vomiting. On abdominal section, it was found that the tumour was behind the peritoneum, and, after incising the posterior layer of this membrane, it was dissected and enucleated from its bed with scissors and fingers. It was especially attached to the aorta and vena cava and part of the dissection had to be carried out under considerable difficulty. The cyst was removed entire and the patient made a good recovery. So far as could be ascertained after removal, it appeared likely to have started from remains of the mesonephros and therefore to have been congenital in origin.

Vermiform Appendices.—Mr. Jordan Lloyd showed two vermiform appendices illustrating the variation in size of this structure as met with in surgical practice; one being six inches long and nearly an inch in diameter, and the other about one inch in length with a diameter of a quarter of an inch. Both had been successfully removed by operation from young patients during

an interval between attacks. The larger appendix swung free in the peritoneal cavity, was readily found and easily dealt with; the smaller on the other hand was buried beneath the peritoneum, and was discovered with difficulty.

Strangulated Ovarian Cyst.—Mr. George Heaton showed a large unilocular cyst of the ovary, which had undergone acute strangulation owing to torsion of its pedicle. The cyst and Fallopian tube were intensely engorged, and their tissues full of extravasated blood. The specimen was removed by abdominal section from a little girl, aged 9 years. There was a history of several previous attacks of abdominal pains, but no tumour had ever been noticed until the present attack. This began five days previous to the operation with abdominal colic, vomiting, and great hypogastric tenderness. The cyst, which grew from the left ovary, lay in the right iliac fossa, and formed a tender tumour resembling an appendical swelling. There was some difficulty at the operation in ligaturing the pedicle, as it sprang from the left side of the pelvis through an incision in the right side of the abdomen. The child made a rapid and uninterrupted recovery. The pedicle was twisted $4\frac{1}{2}$ times round its own axis.

Hydro-nephrotic Kidney.—Mr. Barling showed a specimen of hydro-nephrosis removed from a gentleman aged 35, who had in the first instance symptoms suggestive of biliary colic. The abdomen was explored and the absence of gall stones determined, and it was then found that the right kidney was very movable. Through the lumbar incision the kidney, the pelvis of which was very much dilated, was stitched firmly to the muscles and aponeurosis. A speedy recovery followed, but in a few weeks there was an intense attack of pain in the old region and a very large hydro-nephrosis followed. As this persisted and entirely disabled the patient for his work nephrectomy was performed. The ureter was narrow at its attachment to the

pelvis of the kidney, and it was so attached that when any considerable amount of urine was contained in the pelvis the ureter was compressed by it; there was also an abnormal renal artery.

Cystic Kidney.—Mr. Barling also showed a very large specimen of this condition removed from a middle-aged woman, who had suffered from intense pain in the left lumbar region, from frequent and painful micturition, and who had passed three small calculi some time before. As it appeared that a rapid enlargement of the kidney had taken place, hydro-nephrosis was diagnosed, probably from calculus plugging the ureter. There was suspicion that the right kidney was also somewhat enlarged. When the left kidney was explored through the loin a large hydro-nephrosis was discovered and a multiple cystic condition involving the kidney, but no calculus was found. As the kidney was obviously doing no work, it was considered wiser to remove it than to leave it. It measured about 13 inches in length by about 5 inches across and through. A very good recovery followed the operation, and the excretion from the other kidney was for ten days much greater than before the operation, for a few days being double in quantity, whilst the specific gravity remained the same. It is quite evident that the right kidney has increased in size since the patient's admission to hospital.

Uterine Myoma, removed by vaginal hysterectomy.—Dr. Smallwood Savage shewed a specimen which he had removed from a patient, aged 32, in May, 1901. She had been married eleven years, and had had two children, ten and four years ago. Her history was that for two-and-a-half years she had suffered from profuse hæmorrhagia which had produced profound anæmia. On examination a hard tumour was felt to be situated in the anterior uterine wall and displacing the fundus backwards, the tumour was about the size of one's fist. Vaginal hysterectomy was performed, from which the patient made a good recovery.

The tumour was a hard firm myoma situated in the anterior wall of the uterus.

Scleroderma of abdomen.—Mr. Arthur Loxton showed a woman suffering from this condition.

Motor Insufficiency of the Stomach, and its Treatment.—A paper on this subject was read by Dr. A. H. Carter.

Council Meeting.—Several members referred to the business on the agenda paper of a forthcoming meeting of the Council, but no resolution was adopted.

Faulty Anchylosis of the Knee after Excision in Childhood.—Mr. William Thomas had been announced to read a paper on this subject, under the following headings:—

“Excision of the knee in children is usually a very successful proceeding, the patient recovering with a stiff but useful limb.

It is, however, frequently followed by steadily increasing flexion of the knee until a very faulty position is attained. This appears in many cases to be due to abnormal increase in the development of bone anteriorly.

Brief histories of four cases bearing out the above.

Photographs of cases, and portions of bone removed in correcting the deformity, will be shown.”

Owing to the length of the previous proceedings, it was resolved, with Mr. Thomas' consent, “That Mr. Thomas be thanked for his paper, and that it be taken as read.”

MIDLAND MEDICAL SOCIETY.

The Second Ordinary Meeting of the Session was held on Wednesday evening, November 13th, 1901, at the Medical Institute, the President, Mr. ARTHUR OAKES, being in the chair.

Messrs. H. H. C. Dent, F.R.C.S., and William Cassels, M.B., C.M., Glasg., were elected members of the Society.

Spastic Paraplegia.—Dr. Walter Jordan showed a woman who had the symptoms of spastic paraplegia—exaggerated knee-jerks, ankle-clonus, and rigid spasm of the calf-muscles on both sides, so that she walked entirely on her toes, and was unable to get her heels to the ground. She could get about only when helped by someone, or by holding to the furniture. The history she gave was that five years ago while in a tramcar she had an attack of giddiness, and her right arm and leg went numb. When she had to get out she found she could not walk properly, and she got home by holding on to the walls as she went. After this the difficulty of walking increased gradually up to the present time, and the contraction of the calf-muscles developed. In June of the present year she had another attack of giddiness and fell. Since this the left leg, previously unaffected, had shown the same symptoms as the right.

When seen first in August, the muscles of the right side of the face seemed weaker than those of the left, but this could not be observed at the meeting. The patient was 42 years old, married, and had had seven children, of whom two were living, five having died under twelve months of age. There were no symptoms of cardiac disease.

The diagnosis was cerebral thrombosis, but that of embolism was preferred by a member in discussing the case.

Dr. Leith showed tube, plate, and microscopic specimens, illustrating the morphology of the plague bacillus, and the method of its diagnosis in a suspected outbreak of the disease. He gave a short account of the evolution of its more characteristic shapes, and referred to the Glasgow outbreaks, and the importance of the rat as a disseminator of the disease.

Paper.—Mr. Gamgee read a paper on "Strangulated Hernia."

MIDLAND MEDICAL SOCIETY.

The Third Ordinary Meeting was held in the Medical Institute, on Wednesday, November 27th, 1901, the President, Mr. ARTHUR OAKES, being in the Chair.

Messrs. E. S. Nutting, M.D., Edin.; and C. J. Higginson, M.R.C.S., L.R.C.P., were elected members of the Society.

Dr. Kauffmann showed a case for diagnosis. It was that of a girl, aged eleven, who was affected with a slowly progressing paralysis, with ataxia, which had commenced at the age of eight. There was no evidence of congenital syphilis, and no history of the paralysis following on acute infective disease. The legs were now extremely weak, and in spastic extension, which was, however, not very rigid; six months ago, when she could still walk a little, there was some reeling ataxia of the gait. The arms were now weak and tremulous, the tremors resembling those of insular sclerosis in every respect. There was also a little shaking of the neck and trunk on exertion; no nystagmus had been observed, and her fundi oculorum and pupils were normal. The voice was extremely low and a little nasal, as though there were slight paresis of the soft palate; utterance was very slow and very

imperfect, but could not be described as scanning. The ends of the words were clipped, and their meaning was understood with difficulty; there was no aphasia. Sensation all over the body was normal. The bladder and rectum were controlled. The mind showed a condition of quiet satisfaction, and the face wore a permanent smile. The intellectual development was not that of a child of eleven, and would have been poor for a child of six or seven.

Dr. Kauffmann was inclined to regard the case as one of hemispherical cortical degeneration; the view of its being one of hereditary cerebellar ataxia was propounded, and the question of insular sclerosis was discussed.

Trigeminal Neuralgia Treated by the Injection of Osmic Acid.

—Mr. Haslam showed a woman, aged 49, whom he had treated by the method suggested by Sir William Bennett in the *Lancet* of November 4th, 1899. The neuralgia had existed for six years and during the latter half of that period the pain had been very severe, while for the last six months it had been almost more than she could bear. Immediate and complete relief followed the operation, which was performed four months ago, and there had been no return of pain. Mr. Haslam pointed out that though it was too soon to speak positively about the curative effect of the method in this case, there was every reason to believe that the results were at least as good as those obtained by the major surgical operations devised for the relief of this terrible condition.

Dentigerous Cyst.—Mr. George Heaton showed a Dentigerous Cyst which he had removed from the lower jaw of a boy, aged 11½ years. The cyst, which was the size of a pigeon's egg, contained clear straw-coloured fluid. A bicuspid tooth of the permanent set was fixed in its wall with the crown projecting into the cavity of the cyst. The fangs of the tooth were ill-developed. The cavity left in the jaw was packed with gauze and closed up by granulation.

Dr. Purslow read a paper on "Acute Hydramnios," and Mr. Leedham Green read a paper on the "Closure of Traumatic Defects of the Skull."

KIDDERMINSTER MEDICAL SOCIETY.

A Meeting of this Society was held at the Kidderminster Infirmary, on Friday, November 15th, 1901, Mr. J. LIONEL STRETTON, President, in the Chair.

Cases.—The President showed a portion of the Sigmoid Flexure, containing a tight cancerous stricture, removed from a woman, aged 42. She had suffered from symptoms of obstruction for two years, and when first seen by Mr. Stretton, there had been total obstruction for four days with acute symptoms. The cæcum was opened on October 18th, and a large quantity of faecal matter drained away. Twelve days later, the abdomen was opened on the opposite side, and the growth was found lying in the pelvis. It was, with difficulty, brought out of the wound to be removed, and the ends of the bowel approximated with a Murphy's button. She bore the operation, which lasted an hour, well, but died of shock 18 hours later. *Post-mortem*, the button was secure and there was no peritonitis.

He also showed a woman, aged 36, from whom he had removed the whole of the breast for a recurrent growth. She was first operated on in March, when a small, apparently innocent, tumour was removed. This was forwarded to the Clinical Research Association for examination, and they reported: "This tumour of the breast is an adeno-fibroma, and there are no signs of malignancy in it." The recurrence, which was noticed in October, was in the cicatrix, and had such a suspicious appearance that a free removal was undertaken. This specimen was also forwarded to the Clinical Research Association, who reported: "This is a very soft and rapidly-growing carcinoma

of the breast, immediately beneath the scar of the previous operation." Mr. Stretton commented upon the difficulty of diagnosis in these cases, even the negative evidence of skilled microscopists was not infallible.

He also read notes of a case of death of a horse under chloroform. "Miranda," a dark-brown mare, eight years old, well bred, highly nervous, in excellent condition, suffering from two large suppurating lumps over the elbows. The anæsthetic was commenced about three p.m., on Sep. 3rd, after she had been hobbled and thrown down in the usual way. She had been prepared by giving a bran mash the night before, and a meal of bran and chaff damped at eight a.m. that day, that being her last meal. She inhaled the chloroform quite quietly, there was no struggling, and the respirations were long and deep. I had just removed the first lump, and was preparing to sew up the wound, when the Veterinary Surgeon informed me that she had stopped breathing; and all our efforts, artificial respiration, strong ammonia, etc., were unavailing. The time from the commencement of inhalation was about ten minutes. As I had no previous experience of anæsthetising horses, I deemed it more prudent to call in the aid of a Veterinary Surgeon for this purpose, and my usual Veterinary Surgeon and his qualified assistant both of them attended. The chloroform administered was methylated, and was given in the following way:— A towel was laid on the ground under the horse's head, a large carriage sponge was soaked in chloroform and placed over her nose and mouth and the towel folded up over it, a second towel was folded over this, when more chloroform was required; the outer towel was removed, and the chloroform poured over the other one to soak into the sponge. It was not for me to question the methods employed, but I must say that it struck me at the time that if we attempted to administer chloroform to a human being in such a manner we should be courting disaster. I am so convinced of the importance of pure chloroform, and a slow administration with plenty of air, that I cannot help thinking that even in the lower animals such a

course would be more prudent ; at any rate my experience tends to show that there is danger in administering chloroform to horses, and this may be not only of interest but perhaps of some service to other members of the profession.

Dr. Evans read notes of a case of Nephritis with Suppression of Urine. A man, aged 43, had been ailing several years with attacks of nausea, vomiting and headache. Attributed his illness to getting overheated at his work in a foundry. He has noticed that at times his urine has been scanty and thick. For the past ten weeks his legs have been swelling. On admission to hospital, there was œdema of both legs and feet, a foul ulcer on left leg. Slight amount of ascites, œdema of scrotum and penis, basis of lungs congested, much œdema of upper eyelids, lower lids darkly ecchymosed, conjunctivæ much congested. He was irritable, resented nursing attention, and refused food and medicines. Ten days after admission, he became drowsy, which deepened into coma and death. On October 12th, he passed a small quantity of urine and vomited continuously all day from then till October 15th. No urine passed from that date till his death on October 23rd, he passed only $\frac{1}{2}$ ounce of urine ; the bladder was empty throughout. *Post-mortem*, both kidneys much contracted, the capsule of the left peeled off easily, that of the right somewhat adherent. Dr. Evans commented on this fact, that in 11 days only $\frac{1}{2}$ ounce of urine was passed.

Mr. A. G. Naylor read a paper on "Fractures," which was followed by an interesting discussion, and the meeting terminated

REVIEWS.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS.*

THESE two volumes are the pioneers of a series of books on Extra-medicinal Methods of Treatment. Such a system is undoubtedly wanted, as there is not at present any recognised complete work dealing with this subject in the manner intended in these volumes. In a prefatory "foreword," the editor states that the System of Physiologic Therapeutics deals with all remedial methods which do not depend upon the exhibition of drugs. Subsequent volumes are promised on Climatotherapy, Pneumatotherapy, Balneology, and the treatment of disease by rest and exercise in all their forms. There have, of course, been books written dealing with these subjects separately, but we think there is room for a system which will group them in a manner convenient for reference, and at the same time deal with them sufficiently fully to be of monographic value. The volumes we have before us are well got up, the print is clear and of good size, and the paper is not too thin. The substance of the paper indeed, makes the book look more bulky than the real contents require. To put this in other words—they do not take anything like the time to read that their size suggests.

Vol. I. is divided into two parts—(1) Electro-Physics, and (2) Apparatus required for the Therapeutic and Diagnostic use of Electricity.

(1) In Part I, static and dynamic electricity are full described,

* A System of Physiologic Therapeutics. Edited by Solomon Solis Cohen, A.M., M.D. Vols. I. and II. Electro-Therapy. By George W. Jacoby, M.D., Consulting Neurologist to the German Hospital, New York City. London: Rebman Limited. 1901.

and, so far as our present knowledge allows, explained. There is a very clear description of galvanic and faradic currents, and the relations between current, resistance, and electro-motive force. The analogy drawn between water in a tank and electricity, for the purpose of explaining the difference between the above terms, is exceedingly happy, and makes the subject as clear as possible to the merest beginner. The diagrams, however, on page 74 seem in some way to be faulty. In Ampere's law it is the *left* hand of the swimmer which shows the direction of the current—it is quoted thus in the text—whereas in the figures it is the *right* that is extended. Again, in the diagrams illustrating the induced current, the wires are wrongly lettered, spoiling what would otherwise be a simple picture easily understood.

(a) Part II. deals very fully with Apparatus; Batteries, Coils, etc., and contains many useful hints on the management of cells and batteries generally. The important subject of the correct method of using currents from the street-mains is also adequately dealt with. This volume concludes with a section on the apparatus in use for, and the method of utilising, the X rays.

Vol. II. deals with Diagnosis and Therapeutics. The action of electric currents on healthy and unhealthy nerves is thoroughly explained, and the section on the reaction of degeneration is as good as anything in the book. We note that the author lays special stress on the fact that qualitative change, as shown by the polar contraction to the galvanic current, is frequently absent in degeneration of the nerve, and is therefore by no means an essential sign of reaction of degeneration, as assumed by many. The discussion as to the true effect of electricity in its various forms on the system, physically and psychically, is conducted with a fairness and open-mindedness which strike us as being admirable. The author certainly does not attempt to prove too much and if anything errs rather in the opposite direction.

Under the head of Therapeutics, general methods of administering electricity are first considered, then special methods as

required for special nerves. The usual diagrams of nerve and motor points are included, and a special section treats of electric baths. The author's denunciation of the so-called electric belts is perhaps a little too mild and might have been somewhat stronger. He deprecates the use of electricity in any form for the headache or giddiness caused by organic disease, and states quite definitely that after due consideration and experience he has found it valueless in chorea and paralysis agitans. Most neurologists will be inclined to agree with him in these particulars.

In the form of addenda, special articles have been included on electricity in surgery, eye conditions, and diseases of the skin, etc. These are not up to the level of the rest of the work. The one on general surgery is especially fragmentary, and contains simply platitudes where a full description of methods mentioned would have been more useful. For instance, the important subject of cystoscopy is dismissed with two lines referring to—not describing—two diagrams. The greater omission might have included the less and the reader been none the worse off.

We shall look forward to the subsequent volumes of this system with considerable interest.

RHINOLOGY, LARYNGOLOGY, AND OTOTOLOGY
AND THEIR
SIGNIFICANCE IN GENERAL MEDICINE.*

IN these days of specialism it is refreshing to find an author who has the courage to treat of a "special" subject from a general point of view. There is, perhaps, no more harmful tendency in the profession at present than that of dividing up each subject and calling it a speciality. It is bad for the patient and for the practitioner. The latter, however broad his views may be in the earlier part of his career, tends to become limited as the time at his disposal becomes less. He shows more and more tendency to forget that his patients have other organs besides the one to which he devotes his energies. The patient has often an exalted idea of the value of the specialist. It occasionally—perhaps more often than is known—happens that the general physician or surgeon who does not pose as a specialist, and whose views of a case are more likely to be "all round" forms a more comprehensive opinion than does the man of one organ. He is consequently in a far better position to treat the patient to the advantage of the latter.

The work which Dr. Friedreich has given to the profession is one of a most satisfactory nature. It is the production of an expert, but at the same time of one who has kept himself unfettered by "specialism." Such a book, therefore, will come as a great help to those who are concerned with the every-day treatment of diseases which have laryngeal or aural manifestations. We admit, of course, that many of the subjects are perhaps out of the ordinary, but a study of Dr. Friedreich's book

* *Rhinology, Laryngology, and Otology and their Significance in General Medicine.* By E. P. Friedreich, M.D. (Leipzig). Translated by H. Holbrook Curtis, M.D. London: W. B. Saunders and Co.

opens up several interesting questions in the symptomatology of many every-day diseases.

The chapter on Nervous Diseases in connection with the larynx, the ear, and the nose, is one of the most important and interesting in the book. In fact there is no portion of the book which does not contain important and suggestive reading. Many facts are stated from such a new standpoint that one almost wonders that they have not been self-evident.

The work is one which is bound to be widely read.

PRINCIPLES OF SURGERY.*

PROF. SENN's works on surgery are always of interest, and the present one has now reached its third edition with some few alterations and additions, as two new chapters have been added, —one on Degeneration, another on Blastomycetic Dermatitis.

For the benefit of our readers who may not be acquainted with the work, or not have seen previous reviews, we may give a brief notice of the characteristics of the book. It is in no sense a text-book of surgery. It is a treatise on processes or pathology, though a small account of principles of treatment is added. The subjects of Inflammation, Tuberculosis, and Septicæmia in their manifold characters are set before the reader in that masterly manner which is so well known in the author. The book, therefore, is one which has an equal claim on the physician and the surgeon, for its scope is principles which are virtually the same in all diseased conditions, and which all practitioners should be familiar with, whether they use the knife or the stethoscope.

* Principles of Surgery. By N. Senn, M.D., Ph D., LL.D., Professor of Surgery in Rush Medical College in Affiliation with the University of Chicago. Third Edition. Philadelphia : F. A. Davis Company.

We therefore strongly recommend careful study of Prof. Senn's book, and time so spent will well reward the reader, for there is, perhaps, no other work which treats the matter from the same point of view. It is, in fact, the philosophical basis of surgery.

THE NORDACH TREATMENT FOR CONSUMPTION IN THIS COUNTRY.*

THIS small work is in most part a reprint of articles already published by the writer in the *Nineteenth Century* and the *Westminster Review*. The author writes from personal experience of phthisis and of the great efficacy of the method as carried out at Nordach. The main object of the book is to demonstrate the practicability of the treatment being brought within general reach in this country, and at the same time to show how inadequate are all the older methods of treating phthisis by drugs. The writer argues well for his point, and the book should certainly be read by those interested in the latest methods of dealing with phthisis. The work gives many interesting statistics and valuable suggestions, not only for establishing sanatoria, but for the personal application of the Nordach treatment to individual cases.

ATLAS AND EPITOME OF SPECIAL PATHOLOGIC HISTOLOGY.†

WE have much pleasure in drawing the attention of our readers to the second part of Durck's Pathologic Histology.

* The Nordach Treatment for Consumption in this Country. By James Arthur Gibson. London : Sampson, Low, Marston and Company.

† Atlas and Epitome of Special Pathologic Histology. By Herman Durck. Edited by Ludvig Hektoen. London : W. R. Saunders and Co.

This volume deals with the Liver, Kidneys, Sexual Organs, Nervous System, Skin, Muscles and bone. As may be remembered, the first part was reviewed in the March number of the *Birmingham Medical Review*, and the opinion then expressed, concerning the accuracy and value of this Atlas and Epitome, has been well justified. We are able to repeat that we know no publication which surpasses Durck's Atlas in clearness of the plates and lucidity of description. The plates on the kidney in particular, are worthy of notice, though for many purposes, we would have liked to see one or two of the more important lesions given as "low power" views. There is much confusion in the mind of the student on the subject of Nephritis, especially the chronic forms, and much assistance would be rendered by a frequent study of sections under less magnification.

We understand that another volume is in course of preparation. This is to deal with General Pathologic Histology. It will complete a work of more than ordinary utility, and one which we strongly recommend every student to possess for himself.

TENDENCIES TO CONSUMPTION: HOW TO COUNTERACT THEM.*

THIS work is to some extent a revision of our knowledge of the treatment of consumption. It does not pretend to anything of the nature of an original essay on any special method, but is intended as a plain and useful work to place in the hands of the family doctor or even the laity. There is a straightforward account of the influence of fresh air, proper ventilation, good and wholesome exercise as preventives to consumption, and as

Tendencies to Consumption : How to Counteract Them. By J. D. E. Mortimer, M. B. London : The Scientific Press, Limited.

curative methods when the disease has been contracted. There is nothing particularly technical about the book, and, although we note some omissions, we think it could be read with advantage. There is very little on the open-air method.

ATLAS AND EPITOME OF OPHTHALMOSCOPY.*

THIS is another of the series of Hand-Atlases published by W. B. Saunders, and which are rapidly making their reputation. The present volume deals with ophthalmoscopy and is by Prof. Haab of Zurich, and edited by Dr. G. C. de Schweinitz. It is one of the best got-up books that we have seen on this subject. There are eighty plates most beautifully executed, the majority of which represent the ophthalmoscopic appearance of the fundus oculi in various diseased conditions, while others show the microscopic changes present. All are most true to nature and delightfully accurate. Each has opposite a short letterpress description.

There is an introduction which deals with "the methods of examination," and also gives some useful practical hints in acquiring a practical knowledge of ophthalmoscopic examination.

We feel sure the book will prove of the utmost value, not only to the specialist, but to the physician, and its moderate price (like all the series) should bring it within the reach of everyone. Indeed we have seen much more expensive works on this subject, which are not in our opinion so well adapted for general use nor so accurate in detail.

* Atlas and Epitome of Ophthalmoscopy. By Prof. O. Haab. London: W. B. Saunders and Co.

ELEMENTS OF PRACTICAL MEDICINE.*

It is superfluous to offer any review of a book which has attained its eighth edition, especially when that book is one which for many years has held a deservedly high place, and there is no medical school in the United Kingdom where Dr. Carter's "Elements of Medicine" is not in use, and probably very few students who have not to thank the author for a sound, clear, and practical introduction to symptoms, diagnosis, and treatment. In this edition the author has rewritten some of those portions of the work which of necessity get out of date owing to increased knowledge of disease, and especially the pathological changes which accompany them. We are glad of the opportunity to congratulate the medical students of the University of Birmingham on the possession of so good a book by one of their own teachers.

MODERN OBSTETRICS, GENERAL AND
OPERATIVE.†

THE first edition of Dr. Dorland's Modern Obstetrics appeared in 1896, with the object of supplying a good sound text-book of obstetrics in a handy and practical form. The writer aimed at producing a work which should be clinical and physiological, and which would embrace the whole subject from conception to the time the child is weaned. Such a work should therefore appeal strongly to the general practitioner, and the fact that the first edition was well received, and that a second is now in our hands confirms this opinion. A perusal also of this edition con-

* Elements of Practical Medicine. By Alfred H. Carter, M.D. Eighth edition. London : H. K. Lewis.

† Modern Obstetrics, General and Operative. By W. A. Newman Dorland, M.D. Second edition. London : W. B. Saunders and Co.

vinces us that our confidence has not been misplaced, and that we can certainly recommend it to the notice of all practitioners and students of medicine as reliable, sound, and practical. The illustrations might perhaps be a little clearer, but still they serve their purpose, which after all is the chief point.

THE ILLUSTRATED MEDICAL DICTIONARY.*

THE second edition of Dr. Dorland's "Illustrated Medical Dictionary" is in every way destined to continue and enhance the reputation of the first. The book is a good dictionary and a practical work. Besides the meaning of the ordinary medical and surgical terms, it gives in tabular form much useful information on poisons and their treatment; while pelvic measurements, nerve supplies, bandages, and many other subjects are illustrated by means of carefully-executed drawings. It is one of the best medical dictionaries that we have seen.

FREYBURGER'S POCKET FORMULARY FOR THE TREATMENT OF DISEASES IN CHILDREN.†

DR. FREYBERGER has written an extremely useful pocket formulary in reference to prescribing for children, and which has now gone into its third edition. To prescribe for children is an art in itself, and those who are well accustomed to ordinary prescription writing, often find themselves at a loss to make certain drugs into a palatable mixture for a young child. To all such we recommend Dr. Freyberger's manual as likely to be of great use.

* The Illustrated Medical Dictionary. By W. A. Newman Dorland, M.D. Second Edition. London: W. B. Saunders and Company.

† Freyburger's Pocket Formulary for the Treatment of Diseases in Children. Third Edition. London: Rebman Limited.

GOLDEN RULES FOR DISEASES OF CHILDREN;
GOLDEN RULES OF
AURAL AND NASAL PRACTICE.*

THESE are two of the recent additions to this now well-known series, the general features of which are practical information in clear language. These two books in every way equal the previous numbers in these characters, and indeed go far to enhance the value of the series in that they are very able productions dealing with important branches. The volume on "Diseases of Children" is filled from cover to cover with many valuable notes, and its frequent use will save the practitioner from many a slip. While of a rather more special character, the volume on "Nasal Practice" will also prove of great use.

MANUAL OF
MATERIA MEDICA PHARMACOLOGY.†

THIS is the second edition of Dr. Culbreth's work, which first appeared in 1896, and the general scope of the work is not changed; there are some minor alterations and additions. The main feature of the book is Materia Medica, and although a short synopsis of therapeutic properties is given, the chief aim is the former. The work is a useful one for reference

* Golden Rules for Diseases of Children; Golden Rules of Aural and Nasal Practice. Bristol: John Wright and Company.

† Manual of Materia Medica Pharmacology. By David M. A. Culbreth. M.D. London: Rebman Limited.

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A PALPABLE HIT.

THE success which attended the Van Houten Cocoa House at the Glasgow Exhibition may be judged from the fact that no fewer than 534,572 cups of cocoa were served at their Tasting Exhibit during the run of the Exhibition. On several occasions the number of cups served exceeded 5,000 per diem, and on one day reached 7,495. The house, itself, with its artistic design and tasteful furnishings, was admitted to be one of the features of the Exhibition, but what undoubtedly drew the visitors was the attraction which a cup of this celebrated Cocoa has for all Cocoa drinkers.

New Books, etc., Received.

From Young J. Pentland—

Principles and Practice of Medicine. By WILLIAM OSLER, M.D.
Fourth edition.

Text-Book of Pharmacology and Therapeutics. By W. HALE WHITE, M.D.

From H. K. Lewis, London—

A Text-Book of Medicine. By ADOLF STRÜMPPELL. Third edition,
translated by Drs. H. F. VICKERY and P. C. KNAPP.

From Longmans, Green and Co.—

Transactions of the Clinical Society of London. Vol. XXXIV.

From Charles Griffin and Co., London—

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Eighteenth issue.

From Cassell and Co., London—

The Practical Nursing of Infants and Children. By FRANK COLE MADDEN, M.B., M.D.

From Baillière, Tindall and Cox, London—

The Cure of the Morphia Habit. By OSCAR JENNINGS, M.D. Paris. Second edition.

From P. S. King and Son, London—

Small-pox in London. By JOHN F. J. SYKES, M.D.

From Williams and Norgate—

Studies in Heterogenesis. By H. CHARLTON BASTIAN, M.A., M.D.

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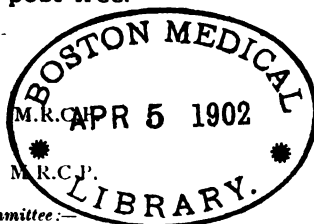
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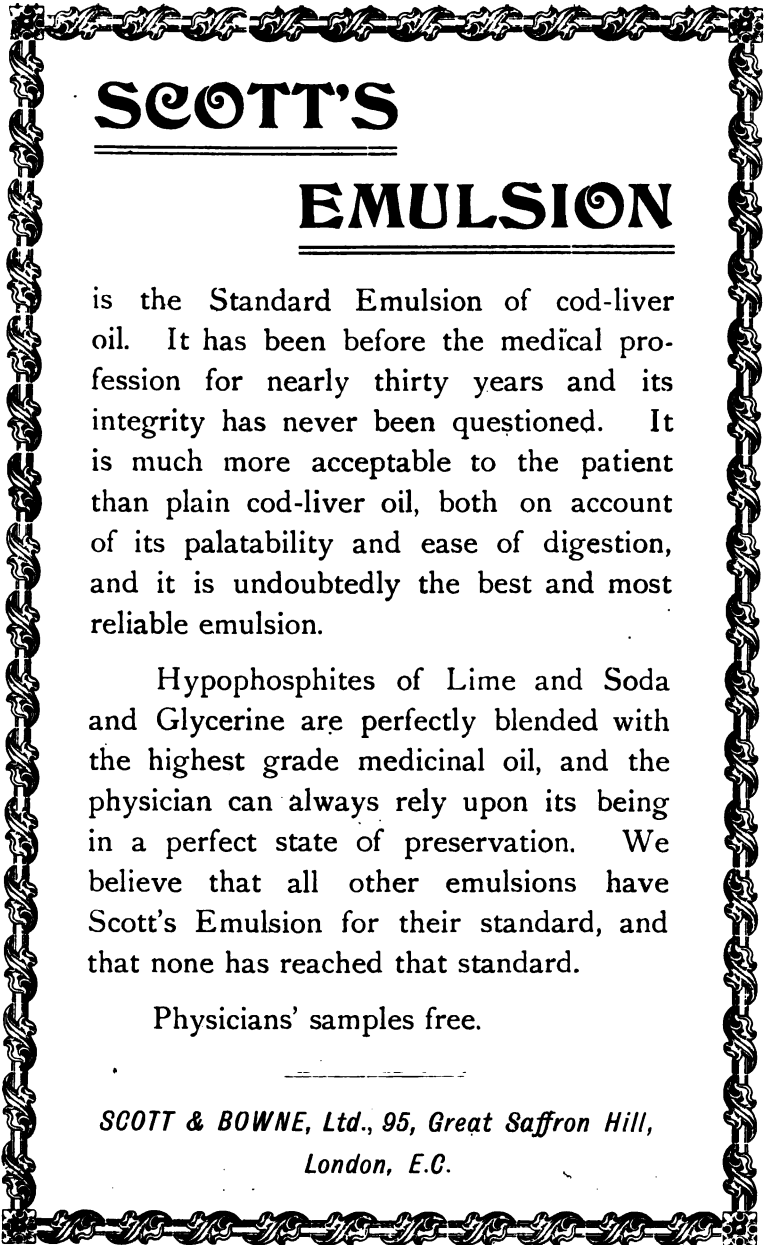
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31	21 5 0	26 17 6	30 7 6	36 10 10	31
32	21 14 2	27 6 8	30 17 6	37 1 8	32
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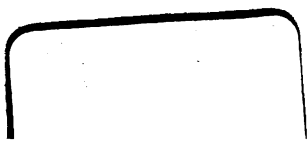
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